

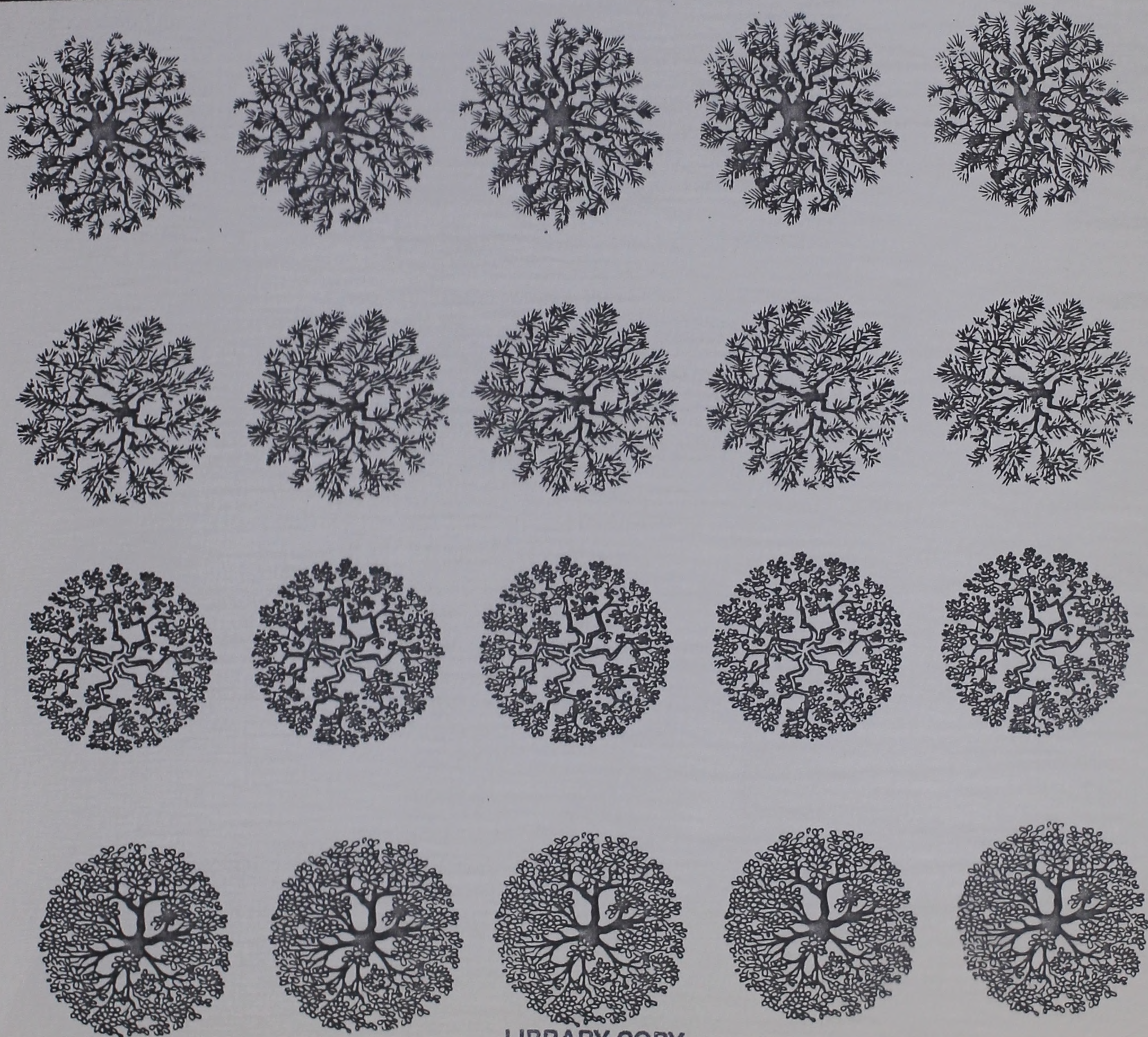
421.32
H6
82
1

re Hazard Factors: An Inventory of Rural Residential Development and Vegetation Type

TIMOTHY D. HOGAN
TOM R. REX

Bureau of Business and
Economic Research
College of Business Administration
Arizona State University
Tempe, Arizona 85287

Western Environmental
Forestry Research and
Development Program
Rocky Mountain Forest and
Range Experiment Station



LIBRARY COPY

ROCKY MTN. FOREST & RANGE
EXPERIMENT STATION

**FIRE HAZARD FACTORS: AN INVENTORY OF
RURAL RESIDENTIAL DEVELOPMENT AND VEGETATION TYPE**

by

Timothy D. Hogan
Tom R. Rex

Bureau of Business and Economic Research
College of Business Administration
Arizona State University
Tempe, Arizona 85287

Western Environmental Forestry
Research and Development Program
Rocky Mountain Forest and Range Experiment Station
U.S. Department of Agriculture Forest Service

1982

LIBRARY COPY
ROCKY MTN. FOREST & RANGE
EXPERIMENT STATION

5-D421.32
A7H6
1982
C.1

TABLE OF CONTENTS

LIST OF TABLES	v
PREFACE	vii
I. INTRODUCTION	1
II. PREVIOUS STUDIES	5
III. METHODOLOGY	11
IV. SUMMARY INVENTORY BY COUNTY AND VEGETATION TYPE	15
V. PROBABLE FUTURE GROWTH TRENDS	25
VI. SUMMARY AND CONCLUSIONS	33
APPENDIX A	37
ARIZONA COUNTIES :	
PROPERTY TAX BOOK AREAS AND	
LAND USE INVENTORY BY VEGETATION TYPE	
Arizona Counties	39
Apache	41
Cochise	45
Coconino	51
Gila	55
Graham	59
Greenlee	61
Maricopa	63
Mohave	65
Navajo	73
Pima	77
Pinal	79
Santa Cruz	83
Yavapai	87
Yuma	91

LIST OF TABLES

Table 1:	Growth In The Number Of Housing Units In Arizona And Its Counties, 1970-1980	6
Table 2:	Subdivided Lands In Arizona's Forested Areas By County	8
Table 3:	Second-Home Inventory In Selected Counties Of Arizona, 1967 and 1975	9
Table 4:	Classification Of Natural Vegetation Types In Arizona	14
Table 5:	Summary Inventory By Use Category And County . .	18
Table 6:	Summary Of Vacant And Residential Parcels By Vegetation Type	19
Table 7:	Summary Of Vacant And Residential Parcels Adjacent To National Forests By Vegetation Type	22
Table 8:	Forecast Population Growth In Arizona's Nonmetropolitan Counties, 1980-1985 and 1980-1990	30
Table 9:	Growth Of Second-Home Ownership In The Phoenix Metropolitan Area, 1967-1980	31

PREFACE

This monograph, Fire Hazard Factors: An Inventory of Rural Residential Development and Vegetation Type, is the final report of a cooperative research agreement, "A Survey of Fire Hazards (Fuel Types) in Relation to Arizona Second Home and Resort Developments." Participants in the agreement were the Rocky Mountain Forest and Range Experiment Station of the U.S. Forest Service and the Bureau of Business and Economic Research at Arizona State University. The study was initiated to determine the amount of residential development occurring in rural areas and its association with the various vegetation types found in Arizona. It is hoped that the detailed inventory developed here can be used to develop the appropriate fuel management procedures so that the risks of fire damage to such development can be minimized.

We want to thank all of those individuals and agencies that have aided us in the completion of this project. In particular, we would like to thank Jack H. Dieterich, Project Leader, and other U.S. Forest Service personnel of the Rocky Mountain Forest and Range Experiment Station; the Arizona Department of Revenue, particularly Robert J. Gloudemans, for providing the property tax computer tapes necessary for the production of the inventory; the County Assessors and their staffs for allowing use of their tax records and for providing maps; Clem Ligocki, who drafted the county maps that appear in Appendix A; Donald W. Jackson, Jr., Director of Research in the ASU College of Business Administration; Nelda Crowell, who provided editorial review and made publication arrangements; and for clerical support under the supervision of Ann Beard and Lani Collins. We are grateful to all of these people and to the other Bureau of Business and Economic Research staff members who worked on the many phases of the project.

I. INTRODUCTION

Although 75 percent of the State's 2.7 million population lives in Arizona's two urban areas, substantial residential development has also occurred in many rural and sparsely-populated areas throughout the State. Much of this development has taken place upon the forested areas of Arizona, and large numbers of both permanent and vacation homes either have been built or are planned for construction in areas adjacent to National Forest Service/Bureau of Land Management lands within the State.

Many of these rural areas under development are located on lands where varying amounts of natural fuels are present in both living and dead forms of vegetation. While such vegetation may not present a continual hazard, during fire season these natural fuels can burn with explosive force--threatening any homes or other improvements in the area. The degree of fire hazard in any particular area during any given period depends upon many factors, including season, weather conditions, type of terrain, and, in particular, type of vegetation and the magnitude of development in the area. The relationships between some of these factors and the degree of fire hazard have been investigated. Specifically, other things equal, the type of vegetation (and the levels of available natural fuels associated with each vegetation type) has been shown to be an important determinant of the degree of fire hazard within a particular area.

While it is obvious that the degree of fire hazard, and the potential for losses due to fire, would be directly related to the level of residential development in an area, specific information on the geographic distribution of such development categorized by the predominant vegetation type in each

locality is needed to (1) identify those areas in which the greatest potential for loss exist and (2) attempt to quantify the magnitude of such losses. Through observation (and some previous research) a general knowledge also exists of those nonmetropolitan areas in which substantial residential development has occurred. However, such information on the geographic patterns of development within the State suffers from two shortcomings which render it inappropriate for evaluating the current potential losses associated with fire damage to structures and other improvements located in the rural areas of Arizona:

(1) available inventories of rural residential development in Arizona have become somewhat dated and/or included only part of the State within their study areas; (2) such inventory information has not generally classified lands by predominant vegetation type (other than forested/nonforested) so that differences in fire hazard associated with different types/levels of natural fuels cannot be evaluated.

The primary objective of this project has been to compile an up-to-date and detailed geographic inventory of residential development in the nonmetropolitan areas of Arizona. In addition, information concerning the predominant vegetation type within each local area has also been integrated into the inventory. The resulting information, presented in both detailed and summary form, allows the evaluation of the potential losses associated with fire hazards in any particular rural area in the State.

To produce this inventory information, the research team has:

(1) compiled a geographic-specific inventory of residential development throughout most of nonmetropolitan Arizona from property tax records; (2) mapped the patterns of predominant vegetation type onto the area designations used within each county's property tax records; and

- (3) aggregated the detailed data by predominant vegetation type to produce summary tables presenting the magnitude of development by vegetation/fuel type within each county.

Following this introduction, there are five sections that convey the findings of the project. The first section briefly summarizes previous studies containing information relating to residential development in non-metropolitan areas of the State. In the next section, the data collection procedures are discussed. The third section presents both the detailed and summary geographic inventory tables and briefly analyzes some of the patterns of development evident in these data. In the fourth section, probable future growth trends in residential development are discussed. The final section briefly summarizes the project results and includes some concluding remarks concerning the applicability of the project's methodology for producing similar inventories for other regions.

II. PREVIOUS STUDIES

Data collection activities of federal, state, and local governments, such as the decennial Census of Housing and the collection of building permit and housing start data, provide information on the magnitude and the pattern of development in the nonmetropolitan areas of Arizona. For example, the Census housing unit counts for each county in the State are presented in Table 1. While such data can be used to document that residential growth has occurred, the geographic detail available for Census data in the nonmetropolitan areas of the State is not sufficient to allow its use for this study. In nonurban areas of Arizona, sub-county Census geography designates "census civil divisions" (CCDs) and/or "places"; the CCD areas are generally too large in area for useful classification by predominant vegetation type and Census places include only areas of population concentration (towns, villages, etc.) and the immediate surrounding area.¹ Similarly, at the sub-county level construction data are generally compiled only for cities, towns, and "balance-of-county" and so do not provide sufficiently detailed geographic detail for purposes of this study.²

In a 1972 U.S. Forest Service study, James C. Thompson and Gordon D. Lewis³ examined residential development on private land in the Mogollon Rim area of Arizona. Their study included prime second-home areas in Coconino, Gila, and Navajo Counties. Their analysis of property tax records indicated that there were 150 subdivisions containing 16,000 lots within their study area in 1972. Dwelling units had been erected on 3300 of these lots by 1972, with most of these units (2900 or 87 percent) being frame structures. Most of the development in the study area up to 1972 was found to have been concentrated around the towns of Payson, Pine-Strawberry, and Heber. No information was included concerning the vegetation type in which the subdivisions were located.

TABLE 1

GROWTH IN THE NUMBER OF
HOUSING UNITS IN ARIZONA AND
ITS COUNTIES, 1970-1980

County	Number Of Housing Units 1970	1980	Percent Change 1970-1980
Apache	9,036	18,872	108.9
Cochise	19,488	32,760	68.1
Coconino	14,808	30,285	104.5
Gila	11,131	18,756	68.5
Graham	4,868	7,405	52.1
Greenlee	3,532	4,342	22.9
Maricopa	320,030	610,002	90.6
Mohave	10,550	28,746	172.5
Navajo	13,894	28,430	104.6
Pima	118,623	218,601	84.3
Pinal	19,837	34,080	71.8
Santa Cruz	4,280	6,402	49.6
Yavapai	16,221	33,759	108.1
Yuma	19,453	37,501	92.8
STATE TOTAL	585,751	1,109,941	89.5

Source: U.S. Bureau of the Census, Census of Population and Housing: 1980, Advance Reports, PHC80-V-4-Arizona, March 1981.

The most comprehensive inventory of residential development in nonmetropolitan Arizona was published in a 1975 Arizona Office of Economic Planning and Development study, Arizona's Remote Subdivisions.⁴ Based upon data from the fourteen County Recorders' offices, several pieces of information, including acreage, number of lots, and geographic location of each subdivision in nonincorporated areas of Arizona was compiled from 1973 records. These data were then tabulated to produce detailed inventory information, by county, concerning the magnitude and characteristics of the development of remote subdivisions in the State. A detailed map of Arizona showing the geographic location of the remote subdivisions in Arizona in 1973 was also included in the study. Of particular interest is the study's special inventory of subdivisions in "forested areas" of the State. For this purpose, the OEPAD study classified four vegetation types (Spruce-Alpine Fir, Montane-Conifer, Juniper-Pinyon, and Encinal and Mexican Oak-Pine) as forested areas. The study found that Arizona's forested areas contained 109,000 acres of subdivided land and 75,500 lots. This represented about 12 percent of the total remote subdivided land in the State in 1973. Table 2 presents a summary of the inventory by county from the 1975 OEPAD study. Navajo County was shown to have the most subdivided land in forested areas (32,000 acres or 29 percent of the total), and 65 percent of the subdivided forested lands was found to have been in Coconino, Navajo, and Yavapai Counties. No separate map of the locations of the subdivisions in forested areas was included in the study. Finally, the OEPAD report included no information on the number of structures or related development occurring in these subdivisions--only information on acreage and numbers of lots was compiled.

TABLE 2

SUBDIVIDED LANDS IN ARIZONA'S FORESTED AREAS*
BY COUNTY

County	Acres	Lots
Apache	12,765	5,086
Cochise	6,978	5,044
Coconino	20,095	18,568
Gila	2,471	6,112
Graham	--	--
Greenlee	--	--
Maricopa	--	--
Mohave	14,508	3,343
Navajo	31,766	19,111
Pima	--	--
Pinal	383	1,894
Santa Cruz	1,214	537
Yavapai	18,445	15,804
Yuma	--	--
	<hr/> <hr/> 108,625	<hr/> <hr/> 75,499

*Some developments may exist within forested areas that are not included in these statistics. Examples include: 1) developments on lands leased from Federal and State agencies and 2) developments that have not been recorded as subdivisions. In addition, it is possible that the subdivision inventory process may have missed a few subdivisions within forests.

Source: Arizona Office of Economic Planning and Development, Arizona's Remote Subdivisions, Phoenix, 1975, Table 6 (page 22).

Information on the extent of second-home development was included in a study of the impact of second-home development on water availability in Arizona by M.E. Bond and Robert H. Dunikoski.⁵ Their study area included the four counties containing the major second-home areas in northern Arizona (Coconino, Gila, Navajo, and Yavapai Counties), for which they inventoried the stock of second homes in 1967 and 1975. Based upon property tax records and other map information, Bond and Dunikoski compiled data on the number of second homes in the major second-home areas in each county on a detailed geographic basis (tax book areas) but did not categorize the geographic areas by vegetation type. From this inventory process, Bond and Dunikoski estimated that there were 5,500 second homes in 1967 and 10,500 by 1975 within their study area (see Table 3).

TABLE 3

SECOND-HOME INVENTORY IN SELECTED COUNTIES OF ARIZONA
1967 AND 1975

County	1967	1975
Coconino	1,106	1,749
Gila	1,532	2,953
Navajo	413	2,594
Yavapai	2,388	3,249
Total	5,519	10,545

Source: M.E. Bond and R.H. Dunikoski, The Impact of Second-Home Development on Water Availability in North Central Arizona, Institution Series Report Number 1, Eisenhower Consortium for Western Environmental Forestry Research, Tempe, AZ, 1977, Table III-9.

III. METHODOLOGY

The geographic inventory of residential development produced by this study was compiled through the use of the latest available property tax records from the fourteen counties of the State. The basic methodology for the inventory was, therefore, similar to the county-records search procedures utilized to produce some of the previous inventory information discussed in Section II. In addition, however, the information in the current inventory was supplemented to include classification of the parcels by both use (vacant, residential, commercial, etc.) and predominant vegetation type.

Although initial plans were to include only forested areas of Arizona within the study area, the entire State with the exception of the Tucson and Phoenix urban areas (and the western nonmetropolitan region of Maricopa County) were, in fact, incorporated in the study's inventory. Within this overall study area however, nonprivate lands not included in county property tax records, such as Indian reservations, military reservations, wildlife refuges, etc., were excluded from analysis.

All of the inventory information relating to individual land parcels was obtained from the Arizona Department of Revenue, which provided data for each county from their County Master File of 1980 property tax records. It was originally intended to produce the detailed geographic inventory using the six-mile square land areas defined by township and range as the individual units of analysis. This procedure would have produced a uniform grid system for the entire study area composed of relatively small and consistent areas. Unfortunately, most Arizona counties do not supply this information to the Department of Revenue as part of each parcel's tax record. Therefore, the alternative set of geographical divisions, which was available on the tape--

the property tax "book" areas--had to be used as the geographic units for the inventory process. The use of these "book" areas defined by the tax records has three disadvantages for the purposes of this project: (1) the "book" areas tend to be irregular in shape and in some counties precise boundaries were difficult to ascertain; (2) the "book" areas tend to be larger than the six-mile square areas defined by township and range resulting in a less geographically-detailed inventory; (3) the "tax-record" geography of the State based upon these "book" areas is not widely known, so that it is difficult to locate an individual "book" area within a particular county. Because the geography of these "book" areas with each county is foreign to most people, maps of each of the fourteen counties of the State defining the location of each "book" area have been included as Appendix A.

By examining the property use code for each land parcel included in the tax records, it was possible to identify the extent of development/use of each parcel. For the purposes of this study, each land parcel was classified by these use codes into the following four use categories: (1) vacant land; (2) residential; (3) farm/ranch; (4) other (including commercial, industrial, etc.)

To identify the predominant vegetation types in each individual "book" area, maps defining the "book" area boundaries were cross-referenced with a map showing the geographic distribution of the primary types of vegetation in the Southwestern United States (General Technical Report RM-78).⁶ For the purposes of this study, the predominant vegetation types occurring in each "book" area were identified by their more common names, as used on the earlier 1973 Arizona Game and Fish Department map for Arizona.⁷ Some difficulty was encountered in this classification process because a majority of "book" areas contained more than one vegetation type within its boundaries. In the final

classification scheme, some areas were classified as having multiple vegetation types. The 23 categories set fourth in Table 4 were ultimately used in the classification process to produce the detailed inventory.

The SAS statistical analysis package available on the Arizona State University's Amdahl computer system was used to compile the geographic inventory from the parcel data contained on the Department of Revenue computer tapes. The computer program aggregated the parcel data to produce counts of the number of parcels in each of the four use categories in each "book" area within each county in the State. With these counts, a computer list of the vegetation types occurring in "book" area, and a computer list of the location of each "book" area, the computer program then produced the detailed geographic inventory tables for each county presented in Appendix A. For each of the State's fourteen counties, these tables show: (1) the general location of each "book" area, (2) the predominant vegetation types in each area, (3) the number of vacant land parcels in each area, (4) the number of parcels with residential structures and/or mobile homes, (5) the number of parcels in use as farms/ranches, and (6) the number of parcels in other uses. In addition, the total number of parcels in each land use category for each county is also presented.

Because the tax record information on the computer tapes did not correspond to the "tax-record" maps for some of the counties, inventory information was compiled for some "books" that were not included on the maps. It was therefore impossible to identify the location and vegetation types for these data. Many of these "mystery books" are probably the result of coding errors in the entry of the tax information into the computerized system. Fortunately, most of these "books" contained very few parcels.

TABLE 4

CLASSIFICATION OF NATURAL
VEGETATION TYPES IN ARIZONA

- (1) Alpine Tundra
- (2) Spruce-Alpine Fir Forest
- (3) Ponderosa Pine Forest
- (4) Pinyon-Juniper Woodland
- (5) Mexican Oak-Pine Woodland
- (6) Chaparral
- (7) Mountain Meadow
- (8) Plains Grassland
- (9) Semidesert Grassland
- (10) Great Basin Desertscrub
- (11) Mohave Desertscrub
- (12) Chihuahuan Desertscrub
- (13) Sonoran Desertscrub--Arizona Upland Subdivision
- (14) Sonoran Desertscrub--Lower Colorado Subdivision
- (15) Sonoran Desert--Upper and Lower Subdivisions
- (16) Spruce-Alpine Fir and Ponderosa Pine
- (17) Pinyon-Juniper Woodland and Plains Grassland
- (18) Chaparral and Desert Grassland
- (19) Pinyon-Juniper Woodland and Chaparral
- (20) Pinyon-Juniper Woodland and Ponderosa Pine Forest
- (21) Ponderosa Pine Forest and Mexican Oak-Pine Woodland
- (22) Sonoran Desert-Upper and Semidesert Grassland
- (23) Chihuahuan Desertscrub and Semidesert Grassland

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, Tempe, Arizona, 1982.

IV. SUMMARY INVENTORY BY COUNTY AND VEGETATION TYPE

In addition to the detailed inventory of residential development presented in Appendix A, which provides information on each individual geographical area, summary tabulations of the inventory tables have also been produced. Table 5 provides the numbers of parcels in each of the four use categories in each county of the State (excluding the Tucson and Phoenix urban areas and the western part of Maricopa County).

To produce summary information for each county and the entire study area categorized by vegetation type, a process of classifying each "book" area by one predominant type was undertaken. In this process, if roughly two-thirds or more of an area consisted of one vegetation type on the reference map (General Technical Report, RM-78), this type was used to identify the "book" area. This type of classification was possible for a majority of the "book" areas. In those cases where this scheme was not possible, the "book" areas were classified into six mixed categories. After every "book" area was classified into one of the vegetation types categories, the parcel data were aggregated to the county level. These tabulations for vacant parcels and residential parcels by county and vegetation type are presented in Table 6.

A separate tabulation of these data was also produced which included only areas adjacent to National Forest lands, since it might be particularly important to evaluate the potential fire hazards associated with such lands. For this purpose, only "book" areas that included National Forest land or adjoined such National Forest lands were included in the compilation. Table 7 presents the summary tabulations for vacant parcels and residential parcels by county and by vegetation type for those areas adjacent to National Forest lands.

Examining the summary data provided in Table 6, it can be seen that the largest numbers of nonmetropolitan developed residential parcels are located in lands classified as "nonforested" vegetation types. Approximately 22 percent of the total of 200,784 developed residential parcels identified in the study area were located in lands categorized as Lower Sonoran Desert--with high concentrations in Yuma, Pinal, Pima, and Mohave counties. An additional 18 percent are indicated to be in areas classified as Semidesert Grasslands--on lands primarily in Cochise, Pima, and Mohave counties.

Within forested areas, the largest number of developed residential parcels are found on lands categorized as Ponderosa Pine (11 percent) or a mixture of Ponderosa Pine and other forest vegetation types (2 percent). Over half of the parcels located in Ponderosa Pine areas are indicated to be in Coconino County--predominantly in "book" areas 100-204 and 400-405. Additional developed residential parcels are also located in the Ponderosa Pine and Spruce-Alpine Fir vegetation areas north of the Grand Canyon ("book" area 601). Substantial residential development has also occurred in lands categorized as Pinon-Juniper areas. Of the 14,000 such parcels (7 percent of total residential parcels), 78 percent are located in Yavapai County, with most of the remaining parcels found in Navajo County.

Concentrating only on developed lands immediately adjacent to National Forest lands (Table 7), the data demonstrate that most of such development has occurred on lands classified either as Ponderosa Pine (23 percent) or Semidesert Grasslands (22 percent). Of these parcels located in Ponderosa Pine areas, 43 percent are located in Navajo County, with 35 percent in Coconino and 20 percent in northwest Gila County. Almost two-thirds of the residential development on Semidesert Grasslands areas has occurred in Pima County, with smaller concentrations in Cochise and Pinal Counties. Substantial development was also

identified on lands adjacent to National Forests and classified as Pinon-Juniper in Yavapai and Navajo Counties. Finally, almost 6,000 developed residential parcels were inventoried as being located on lands adjacent to National Forests and categorized as Upper Sonoran Desert--primarily in Pinal and Maricopa Counties.

Table 6

County	Pinon-Juniper	Upper Sonoran Desert	Total
Apache	10,000	10,000	20,000
Cochise	10,000	10,000	20,000
Coonino	10,000	10,000	20,000
Eliz	10,000	10,000	20,000
Greenlee	10,000	10,000	20,000
Maricopa	10,000	10,000	20,000
Navajo	10,000	10,000	20,000
Pima	10,000	10,000	20,000
Pinal	10,000	10,000	20,000
Yavapai	10,000	10,000	20,000
Yuma	10,000	10,000	20,000
STATE TOTAL	100,000	100,000	200,000

Source: Bureau of Business and Economic Research, Arizona State University, Tempe, Arizona, 1962.

TABLE 5

SUMMARY INVENTORY BY USE CATEGORY AND COUNTY

County	Use Category			
	Vacant Land	Residential	Farm and Ranch	Other
Apache	37,466	4,102	826	743
Cochise	70,266	20,518	2,719	5,091
Coconino	29,069	15,761	611	2,339
Gila	10,088	12,982	250	2,995
Graham	3,608	5,494	1,254	1,164
Greenlee	1,097	1,502	525	652
Maricopa (Part)	12,989	3,730	47	875
Mohave	173,376	25,737	1,088	2,686
Navajo	42,525	15,615	544	3,728
Pima (Part)	21,784	28,374	1,480	12,601
Pinal	60,410	21,825	2,649	3,735
Santa Cruz	30,834	4,610	401	914
Yavapai	48,965	17,756	1,117	3,334
Yuma	21,445	22,778	3,260	6,572
STATE TOTAL	563,922	200,784	16,771	47,429

Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, Tempe, Arizona, 1982.

TABLE 6

SUMMARY OF VACANT AND RESIDENTIAL PARCELS BY VEGETATION TYPE
ARIZONA (EXCEPT TUCSON AND PHOENIX METROPOLITAN AREAS AND WESTERN MARICOPA COUNTY)

County	Vegetation Type											
	Ponderosa Pine	V*	R**	Pinyon Juniper	Mexican Oak Pine	Chaparral	Plains Grassland	Semidesert Grassland	Basin Desert	Great Desert		
				V	R	V	R	V	R	V	R	
Apache	1,345		626	--	--	--	33,722	--	--	--	--	--
Cochise	--		--	--	--	--	--	57,294	10,516	--	--	--
Coconino	10,635	11,786		9,545	269	--	2,714	--	--	577	1,547	--
Gila	3,602	3,190		241	111	1,967	2,101	2,200	4,669	--	--	--
Graham	--		--	--	--	--	--	3	4	--	--	--
Greenlee	17	6		--	--	--	--	151	46	--	--	--
Maricopa	--		--	--	577	--	--	--	--	--	--	--
Mohave	--		--	10,378	70	--	52	32,838	6,779	--	--	--
Navajo	7,552	6,963		13,606	2,648	--	19,209	--	--	1,242	2,603	--
Pima	--		--	--	--	--	--	10,769	9,418	--	--	--
Pinal	--		--	--	--	--	--	864	2,048	--	--	--
Santa Cruz	--		--	--	788	--	501	3,411	3,050	--	--	--
Yavapai	--		--	23,138	10,969	7,092	2,135	11,438	1,797	--	--	--
Yuma	--		--	--	--	--	--	--	--	--	--	--
STATE TOTAL	23,151	22,571		56,908	14,067	9,059	4,236	67,636	7,030	107,866	36,686	4,150

TABLE 6 (Continued)

SUMMARY OF VACANT AND RESIDENTIAL PARCELS BY VEGETATION TYPE
ARIZONA (EXCEPT TUCSON AND PHOENIX METROPOLITAN AREAS AND WESTERN MARICOPA COUNTY)

County	Vegetation Type									
	Mohave Desert		Chihuahuan Desert		Upper Sonoran Desert		Lower Sonoran Desert		Mixture of Ponderosa Pine & Pinyon Juniper	
	V	R	V	R	V	R	V	R	V	R
Apache	--	--	--	--	--	--	--	--	2,039	82
Cochise	--	--	5,614	4,516	--	--	--	--	--	--
Coconino	--	--	--	--	--	--	--	--	3,970	2,095
Gila	--	--	--	--	187	667	--	--	--	9
Graham	--	--	28	45	3,509	5,422	--	--	--	--
Greenlee	--	--	395	443	--	--	--	--	--	--
Maricopa	--	--	--	--	12,989	3,730	--	--	--	--
Mohave	78,428	11,107	--	--	1,466	5	35,287	7,325	--	--
Navajo	--	--	--	--	--	--	--	--	180	90
Pima	--	--	--	--	6,218	7,808	282	1,443	--	--
Pinal	--	--	--	--	7,989	7,636	51,557	12,141	--	--
Santa Cruz	--	--	--	--	--	--	--	--	--	--
Yavapai	--	--	--	--	733	318	--	--	--	959
Yuma	--	--	--	--	2,179	246	19,266	22,513	--	--
STATE TOTAL	78,428	11,107	6,037	5,004	35,270	25,832	106,392	43,422	6,189	2,267
									1,065	968

TABLE 6 (Continued)

SUMMARY OF VACANT AND RESIDENTIAL PARCELS BY VEGETATION TYPE
ARIZONA (EXCEPT TUCSON AND PHOENIX METROPOLITAN AREAS AND WESTERN MARICOPA COUNTY)

County	Vegetation Type												Total Vacant	Total Residential
	Mixture of Pinyon Juniper Plains Grassland		Mixture of Pinyon Juniper & Semidesert Grass		Mixture of Mexican Oak Pine & Semidesert Grass		All Other Mixtures and Unaccounted							
	V	R	V	R	V	R	V	R						
Apache	--	--	--	--	--	--	--	611	360	37,466	4,102			
Cochise	--	--	--	--	--	--	4,449	4,181	2,909	70,266	20,518			
Coconino	1,547	4	--	--	--	--	--	81	17	29,069	15,761			
Gila	--	--	1,545	1,516	--	--	--	337	719	10,088	12,982			
Graham	--	--	--	--	--	--	9	2	21	3,608	5,494			
Greenlee	--	--	--	--	--	--	--	331	430	1,097	1,502			
Maricopa	--	--	--	--	--	--	--	0	0	12,989	3,730			
Mohave	--	--	5,874	69	--	--	--	9,053	364	173,376	25,737			
Navajo	734	978	--	--	--	--	--	2	1	42,525	15,615			
Pima	--	--	--	--	--	--	4,515	9,705	0	21,784	28,374			
Pinal	--	--	--	--	--	--	--	--	0	60,410	21,825			
Santa Cruz	--	--	--	--	--	--	176	289	426	30,834	4,610			
Yavapai	4,384	929	--	--	--	--	--	--	493	48,965	17,756			
Yuma	--	--	--	--	--	--	--	--	19	21,445	22,778			
STATE TOTAL	6,665	1,911	7,419	1,585	9,149	14,177	39,736	4,406	563,922	200,784				

*Vacant Parcels

**Residential Parcels

Department of Business and Economic Research, College of Business Administration, Arizona State University,

TABLE 7

SUMMARY OF VACANT AND RESIDENTIAL PARCELS ADJACENT TO NATIONAL FORESTS BY VEGETATION TYPE
(EXCEPT TUCSON AND PHOENIX METROPOLITAN AREAS AND WESTERN MARICOPA COUNTY)

County	Vegetation Type													
	Ponderosa Pine		Pinyon Juniper		Mexican Oak Pine		Chaparral		Plains Grassland		Semidesert Grassland		Great Basin Desert	
	V*	R**	V	R	V	R	V	R	V	R	V	R	V	R
Apache	1,345	626	--	--	--	--	--	--	1,405	1,321	--	--	--	--
Cochise	--	--	--	--	--	--	--	--	--	--	31,100	3,680	--	--
Coconino	7,585	5,659	7,137	264	--	--	--	--	2,707	41	--	--	--	--
Gila	3,602	3,190	241	111	--	--	1,967	2,101	--	--	--	--	--	--
Graham	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Greenlee	17	6	--	--	203	577	--	--	--	--	--	--	--	--
Maricopa	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mohave	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Navajo	7,552	6,963	8,837	2,595	--	--	--	--	--	--	--	--	--	--
Pima	--	--	--	--	--	--	--	--	--	--	5,411	9,202	--	--
Pinal	--	--	--	--	--	--	--	--	--	--	864	2,048	--	--
Santa Cruz	--	--	--	--	930	788	--	--	13	4	2,389	444	--	--
Yavapai	--	--	18,262	2,592	--	--	6,082	1,642	--	--	336	156	--	--
Yuma	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTAL	20,101	16,344	34,477	5,562	1,133	1,365	8,049	3,743	4,125	1,366	40,100	15,530	0	0

TABLE 7 (Continued)

SUMMARY OF VACANT AND RESIDENTIAL PARCELS ADJACENT TO NATIONAL FORESTS BY VEGETATION TYPE
(EXCEPT TUCSON AND PHOENIX METROPOLITAN AREAS AND WESTERN MARICOPA COUNTY)

County	Vegetation Type												Total Vacant	Total Residential
	Mixture of Pinyon Juniper Plains Grassland		Mixture of Pinyon Juniper & Semidesert Grass		Mixture of Mexican Oak Pine & Semidesert Grass		All Other Mixtures and Unaccounted							
	V	R	V	R	V	R	V	R						
Apache	--	--	--	--	--	--	217	78		5,006	2,107			
Cochise	--	--	--	--	2,755	2,723	1,242	176		35,302	6,802			
Coconino	1,547	4	--	--	--	--	81	17		23,027	7,980			
Gila	--	--	1,545	1,516	--	--	337	719		7,701	7,646			
Graham	--	--	--	--	9	2	59	21		96	68			
Greenlee	--	--	--	--	--	--	331	430		551	1,013			
Maricopa	--	--	--	--	--	--	0	0		8,803	2,596			
Mohave	--	--	--	--	--	--	0	0		0	0			
Navajo	734	978	--	--	--	--	0	0		17,303	10,626			
Pima	--	--	--	--	4,515	9,705	0	0		9,926	18,907			
Pinal	--	--	--	--	--	--	0	0		5,033	5,330			
Santa Cruz	--	--	--	--	176	289	0	0		3,508	1,525			
Yavapai	--	--	--	--	--	--	788	493		26,524	5,842			
Yuma	--	--	--	--	--	--	0	0		0	0			
STATE TOTAL	2,281	982	1,545	1,516	7,455	12,719	3,055	1,934		142,780	70,442			

*Vacant Parcels

**Residential Parcels

V. PROBABLE FUTURE GROWTH TRENDS

The inventory compiled by this study has identified in detail the current pattern of residential development in nonmetropolitan areas of Arizona. For planning purposes, information concerning the magnitude and geographical dispersion of future growth in the nonmetropolitan areas would also be useful. While it is clearly impossible to predict with certainty where such development will occur, some data is available from this inventory and other sources that will allow analysis of probable future trends. Data from the 1970 and 1980 Censuses of Housing provide general insight into the magnitude of growth during the past decade (see Table 1). In the twelve metropolitan counties in the State, the number of housing units grew 91 percent over the 1970-1980 period. In absolute terms several counties had increases in the number of housing units in excess of 10,000 units during the 1970s--Mohave (18,196), Yuma (18,048), Yavapai (17,538), Coconino (15,477), Navajo (14,536), Pinal (14,243), and Cochise (13,272). In percentage terms, Mohave County's growth in housing units (173 percent over the 1970-1980 period) far surpassed any other nonmetropolitan county in Arizona, but four other counties had more than doubled during the ten-year period (Apache, Coconino, Navajo, Yavapai).

State population projections produced by the Arizona Department of Economic Security⁸ also forecast such rapid growth to continue in many non-metropolitan areas of the State. Summary information presented in Table 8 demonstrate that Coconino, Apache, and Navajo Counties are forecast to continue to grow rapidly during the 1980-1990 period, with only Pinal and Yuma Counties' populations projected to grow by less than 20 percent during the next decade.

With substantial vacant land available adjacent to already developed areas in these nonmetropolitan counties (see Table 6), it would be anticipated that most of this future growth would occur in or near areas with substantial existing residential development.

Information gained from property tax records by Thompson and Lewis and from a survey of second-home owners by Hogan indicates that a high proportion of owners of such lots and/or homes are permanent residents of the Phoenix and Tucson areas. Based upon 1972 tax records, the Thompson and Lewis study identified that 70 percent of the parcels in the Mogollon Rim area were owned by Phoenix area residents, with an additional one percent owned by Tucson residents.⁹ From a 1974 survey, Hogan found that 87 percent of the second homes in the prime second-home areas of Coconino, Gila, Navajo, and Yavapai Counties were owned by Phoenix area households, while Tucson area residents owned an additional 4 percent of these properties.¹⁰ In addition, information on second-home ownership from the annual Inside Phoenix surveys of Phoenix area households also provide time series data on the growth of the number of households in the Phoenix metropolitan area owning second homes in Arizona (see Table 9).¹¹ In sum, these data emphasize the close connection between the growth of the State's urban areas and the demand for second-home properties in the nonmetropolitan areas of Arizona. Arizona Department of Economic Security projections forecast, for example, that the population of the Phoenix SMSA will increase by 30 percent during the 1980-1990 period¹²--such projected growth implies continuing residential development in second-home areas of Arizona to supply the demand for such properties by growing numbers of households in the State's urban areas.

As part of their inventory process, researchers from the Arizona Office of Economic Planning and Development also investigated probable future trends

in the development of rural subdivisions in Arizona. While they did not produce forecasts of the number of developed parcels within the inventoried subdivisions, they did conclude that the 1973 supply of subdivided land was more than enough to provide for the magnitude of development in rural areas in the foreseeable future.¹³

Based upon that concept, a closer examination of the data on vacant parcels as identified by the current inventory may provide insight into the probable geographic patterns of future residential development in the nonmetropolitan areas of the State. These statistics (see Table 6) show a 1980 inventory of 564,000 vacant parcels--more than $2\frac{1}{2}$ times the number of developed parcels throughout the nonmetropolitan portion of Arizona. Vacant parcels are most abundant in Mohave (31 percent of the total) and Cochise (12 percent) Counties, but the data in Table 6 show substantial numbers of vacant parcels in all nonmetropolitan counties except Graham and Greenlee.

On the basis of vegetation categories, vacant parcels are concentrated in areas categorized as Semidesert Grassland (19 percent of the total number of vacant parcels), Lower Sonoran Desert scrub (19 percent), and Plains Grassland (12 percent). Within forested areas, the vacant parcels are most abundant in Pinyon-Juniper Woodland areas (10 percent) compared with only 4 percent in Ponderosa Pine Forest areas.

Focusing only on areas adjacent to National Forest lands (Table 7), a total of 143,000 vacant parcels were identified by the project inventory--approximately two times the number of parcels classified under the "developed-residential use" category. Of this total number of parcels, 25 percent were located in Cochise County, with 19 percent in Yavapai, 16 percent in Coconino, and 12 percent in Navajo County. The greatest number of these parcels were identified as being located on Semidesert Grassland (28 percent) and

Pinyon-Juniper Woodland (24 percent) areas. However, substantial vacant parcels adjacent to National Forest lands were also inventoried on areas classified as Ponderosa Pine (20,000 or 14 percent) or mixed Ponderosa Pine and Pinyon-Juniper Woodland (6,000 or 4 percent).

With the pattern of population movement, particularly retirement migration, into the Sunbelt regions, substantial continued residential development of the desert areas of the State should be anticipated. (For example, the population of Mohave County is forecast to grow by 30 percent during the 1980-1990 period--see Table 8.) Large numbers of vacant parcels are available in Semidesert Grasslands, Lower Sonoran Desertscrub, and Plains Grassland areas in several western and southern counties in the State; most of such development will probably be concentrated in areas of Mohave, Yuma, and Cochise Counties near existing developed areas.

Forested areas in the northern portion of the State have also experienced rapid growth and such fast-paced development should also be expected in the future. Most of this residential development is likely to occur in areas adjacent to National Forest lands. The current inventory information demonstrates that Ponderosa Pine lands are the most desirable areas, and there are still large numbers of vacant parcels in such areas. The inventory shows 7,500 vacant parcels in both Coconino and Navajo Counties--primarily near Flagstaff ("book" areas 115,116, and 117), Williams (202,203), Munds Park (400), in the southern portion of the county (403), and near Show Low (209,210) and the Pinetop/Lakeside areas (211,212) of Navajo County. Vacant parcels located in Pinyon-Juniper Woodland areas are far more prevalent, and substantial residential development has occurred on such lands, particularly in Yavapai County. Large numbers of vacant parcels on such areas adjacent to National Forest lands are available in many areas of Yavapai (18,000 parcels), Navajo (9,000), and Coconino (7,000) counties.

More detailed information concerning the geographic location of such vacant areas within each vegetation type can be obtained by consulting the complete inventory presented in Appendix A.

TABLE 8

FORECAST POPULATION GROWTH
IN ARIZONA'S NONMETROPOLITAN COUNTIES,
1980-1985 AND 1980-1990

County	1980 Population	Percent Increase in Total Population	
		1980-1985	1980-1990
Apache	52,083	19	39
Cochise	86,717	13	26
Coconino	74,947	28	57
Gila	37,080	16	22
Graham	22,862	19	33
Greenlee	11,406	12	20
Mohave	55,693	15	30
Navajo	67,709	18	40
Pinal	90,918	4	11
Santa Cruz	20,459	17	34
Yavapai	68,145	11	25
Yuma	90,554	4	13
STATE TOTAL	2,717,866	13	28

Sources: U.S. Bureau of the Census, Census of Population and Housing: 1980, Advance Reports PHC80-V4-Arizona, March 1981; Arizona Department of Economic Security unpublished projections, 1980.

TABLE 9

GROWTH OF SECOND-HOME OWNERSHIP
IN THE PHOENIX METROPOLITAN AREA
1967-1980

Year	Population	Households	Households Owning Second Homes in Arizona	Percent
1967	850,000	241,400	7,000	3
1968	900,000	258,700	8,000	3
1969	966,000	281,200	8,000	3
1970	1,013,000	320,600	10,000	3
1971	1,072,000	348,300	10,000	3
1972	1,175,000	387,400	15,000	4
1973	1,294,000	425,900	17,000	4
1974	1,277,000	447,700	18,000	4
1975	1,310,000	461,000	23,000	5
1976	1,351,000	477,000	19,000	4
1977	1,398,000	500,000	20,000	4
1978	1,463,000	533,000	21,000	4
1979	1,552,000	574,000	23,000*	4*
1980	1,592,000	595,000	24,000*	4*

*Number of households estimated assuming 4 percent ownership rates.

Source: Phoenix Newspapers Inc., Inside Phoenix, 1968 through 1981 annual volumes.

VI. SUMMARY AND CONCLUSIONS

This project produced a detailed inventory of residential development categorized by both land use and vegetation type for the nonmetropolitan areas of Arizona. In doing so, two objectives were accomplished:

- (1) Compilation of the inventory itself--which will provide information for the evaluation of risks of fire damage within any particular locality with the study area;
- (2) Development of a methodology for the production of such an inventory through the combination of land use information from tax records and cartographic information on vegetation type.

Maps providing detailed information on vegetation type are generally available for all areas of the nation. In those states and/or local areas where computerized tax records also exist, this methodology could be easily applied to produce a geographically-detailed inventory similar to the information provided by this project for Arizona. In particular, the detail and usefulness of such inventories would be enhanced if the available tax records included more detailed data on geographic location, such as range, township, etc., than were available from the Arizona data.

NOTES

- ¹ U.S. Bureau of the Census, Census of Population and Housing: 1980, Advance Reports, PHC80-V4-Arizona, March 1981.
- ² See, for example, Jay Q. Butler, "Arizona Construction Activity," Arizona Business, June/July 1981, pp. 27-39.
- ³ James C. Thompson and Gordon D. Lewis, "Rural Residential Development on Private Land in the Mogollon Rim Area of Arizona," in Mogollon Rim Land Use Plan, U.S. Department of Agriculture, Forest Service, Region 3, Albuquerque, New Mexico, 1973.
- ⁴ Arizona Office of Economic Planning and Development, Arizona's Remote Subdivisions, Phoenix, Arizona, 1975.
- ⁵ M.E. Bond and Robert H. Dunikoski, The Impact of Second-Home Development on Water Availability in North Central Arizona, Institutional Series Report Number 1, Eisenhower Consortium for Western Environmental Forestry Research, Tempe, Arizona, 1977.
- ⁶ David E. Brown and Charles H. Lowe, Biotic Communities of the Southwest, General Technical Report RM-78, U.S. Department of Agriculture, Forest Service, 1980.
- ⁷ David E. Brown, The Natural Vegetative Communities of Arizona, Arizona Game and Fish Department, Phoenix, 1973.
- ⁸ Arizona Department of Economic Security, Population Projections for Arizona, Phoenix, Arizona, 1980.
- ⁹ Thompson and Lewis, p. 95.
- ¹⁰ Timothy D. Hogan, Second-Home Ownership in Northern Arizona: A Profile and Implications for the Future, Institution Series Report Number 2, Eisenhower Consortium for Western Environmental Forestry Research, Tempe, Arizona, 1977, p. 68.
- ¹¹ Phoenix Newspapers, Inc., Inside Phoenix, Phoenix, Arizona, 1968 through 1981 annual volumes.
- ¹² Arizona Department of Economic Security, Population Projections for Arizona.
- ¹³ Arizona Office of Economic Planning and Development, Arizona's Remote Subdivisions, p. 33.

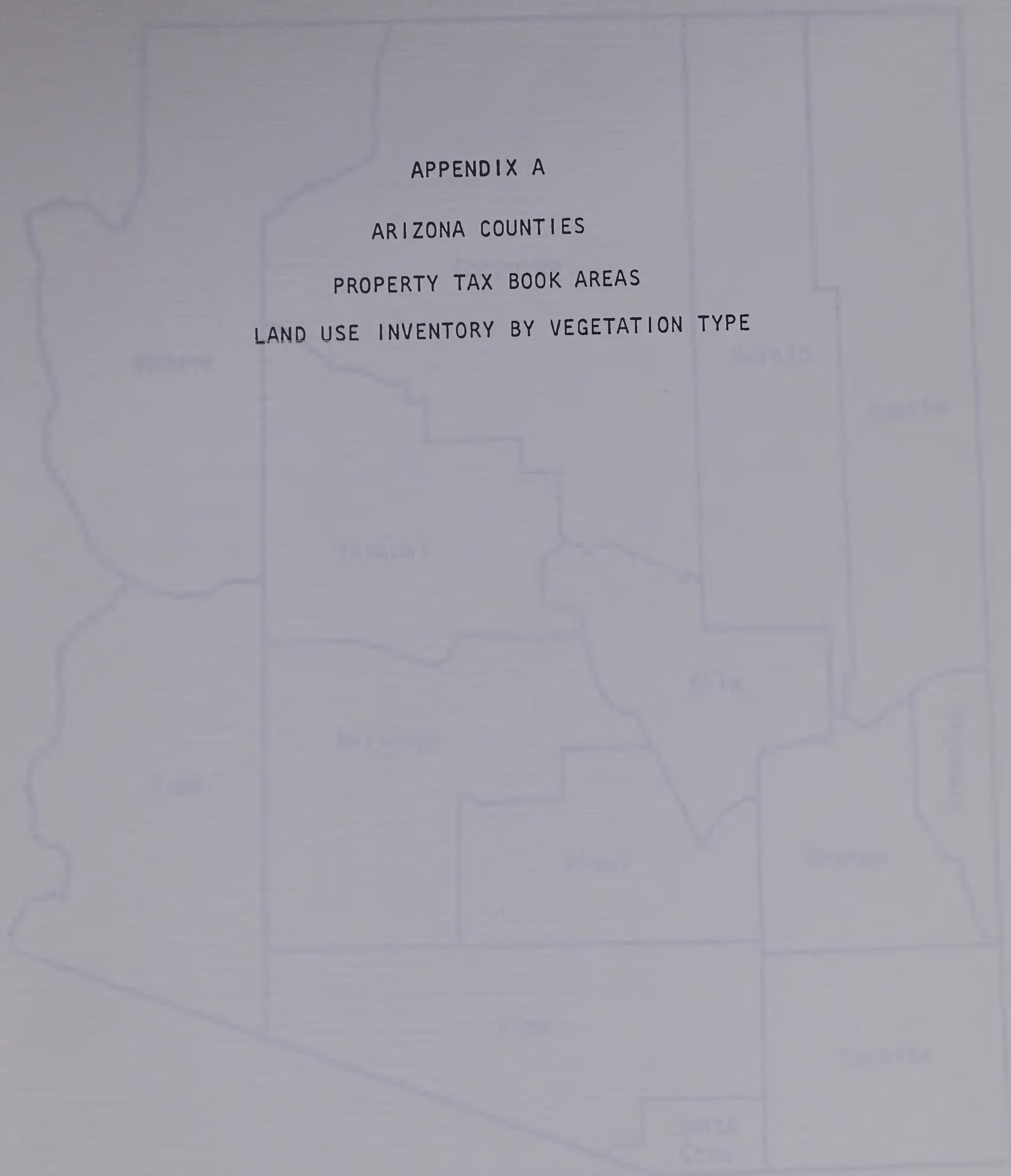
ARIZONA COUNTIES

APPENDIX A

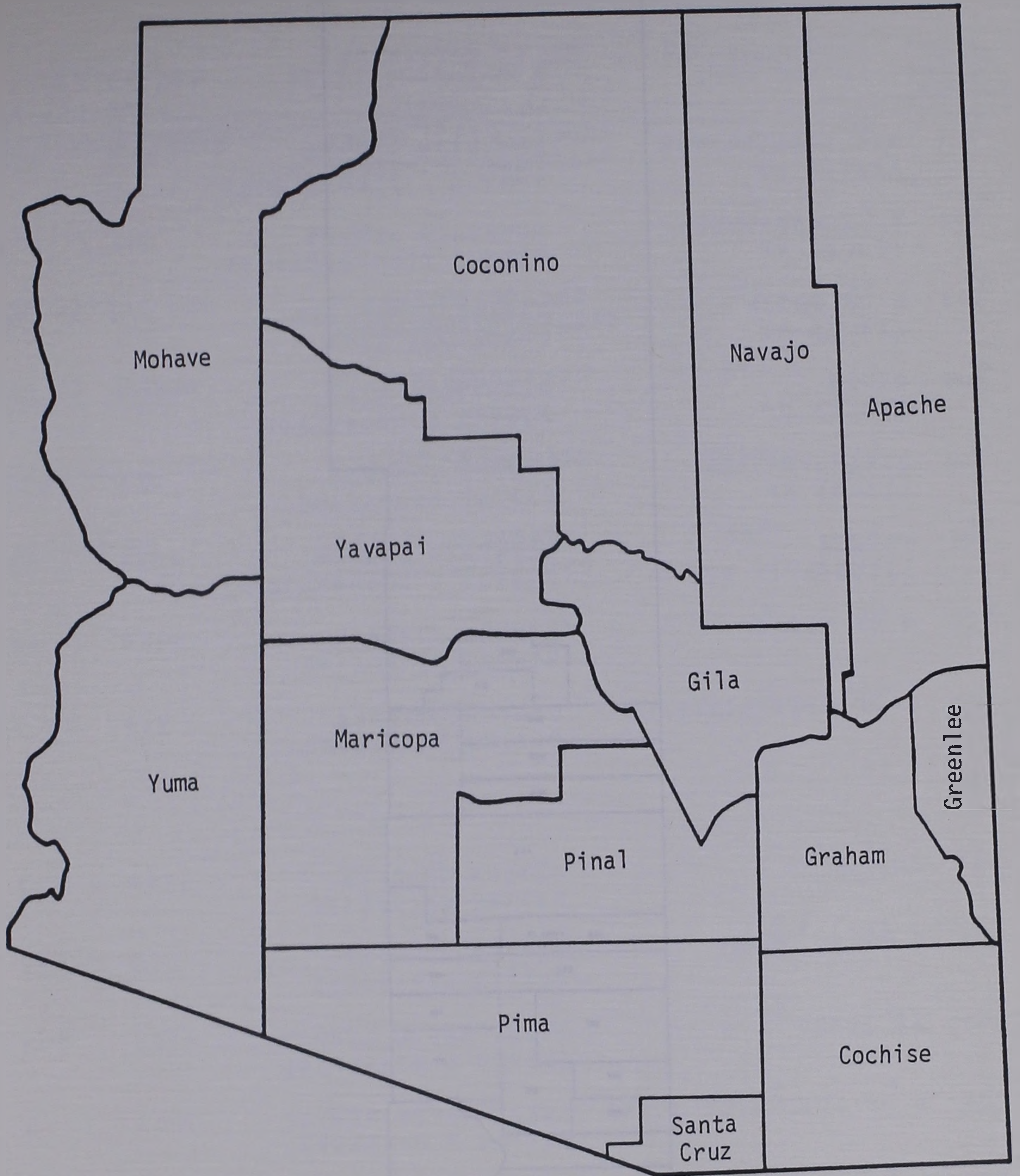
ARIZONA COUNTIES

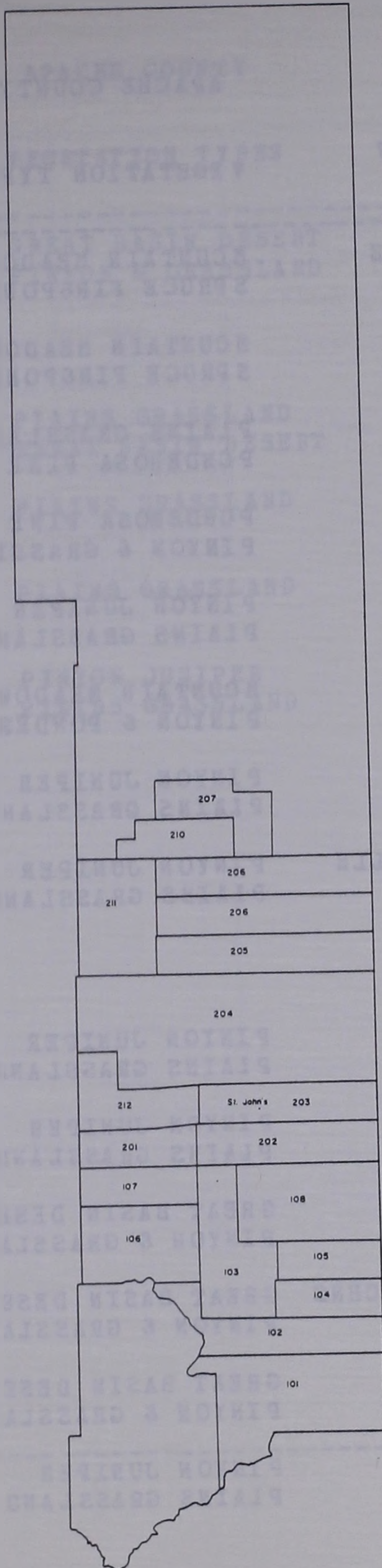
PROPERTY TAX BOOK AREAS

LAND USE INVENTORY BY VEGETATION TYPE



ARIZONA COUNTIES



APACHE COUNTY
PROPERTY TAX BOOK AREAS

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

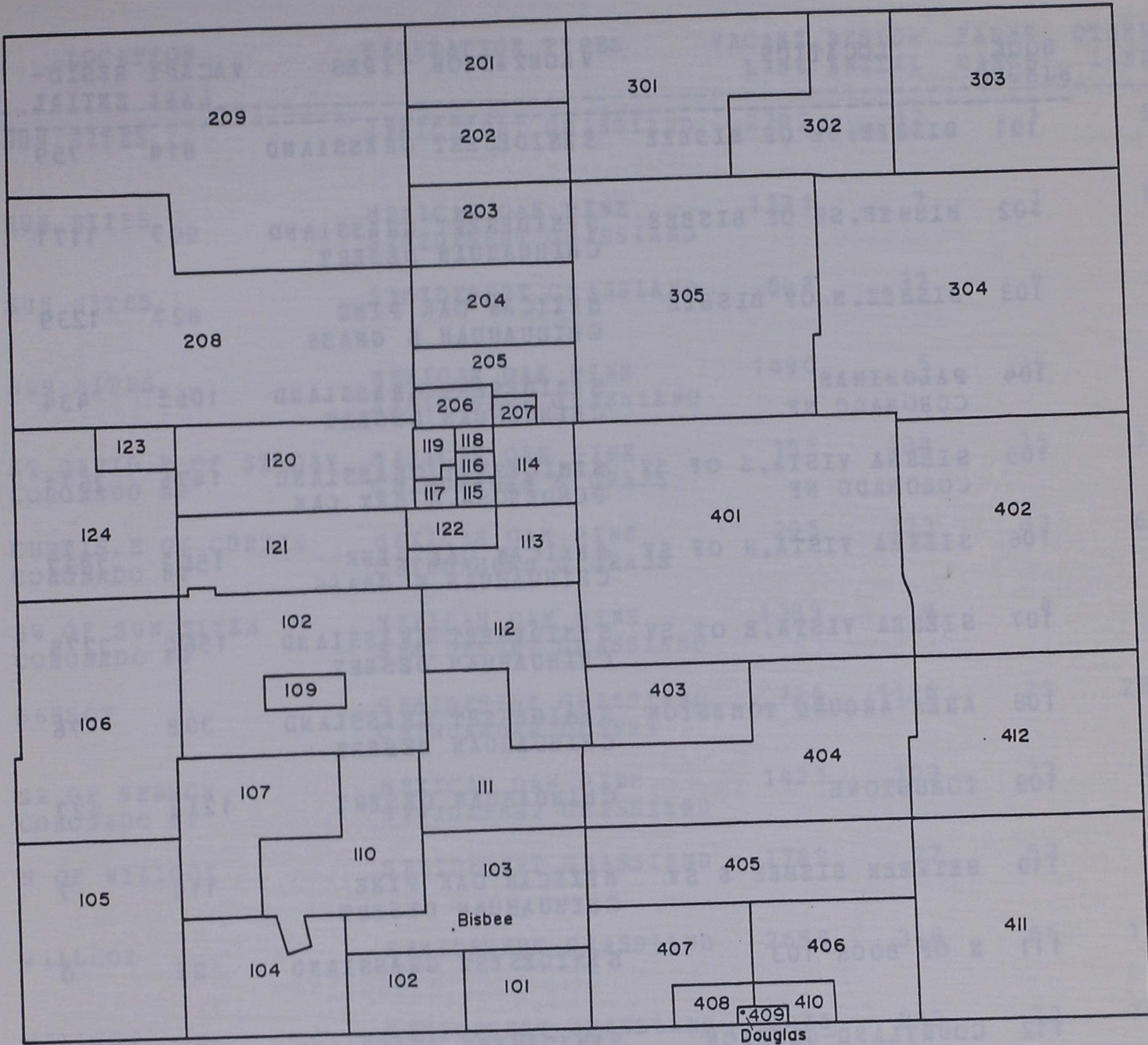
APACHE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH
101	BIG LAKE, ALPINE APACHE NF	MOUNTAIN MEADOW SPRUCE FIRE & PONDEROSA	657	354	7
102	NUTRIOSO-GREER APACHE NF	MOUNTAIN MEADOW SPRUCE FIRE & PONDEROSA	688	272	37
103	N OF GREER APACHE NF	PLAINS GRASSLAND PONDEROSA PINE	217	78	66
104	EAGER APACHE NF	PONDEROSA PINE PINYON & GRASSLAND	1053	902	85
105	SPRINGERVILLE APACHE NF	PINYON JUNIPER PLAINS GRASSLAND	352	419	54
106	VERNON SITGREAVES NF	MOUNTAIN MEADOW PINYON & PONDEROSA	2039	82	48
107	S OF CONCHO	PINYON JUNIPER PLAINS GRASSLAND	8004	54	19
108	N OF SPRINGERVILLE	PINYON JUNIPER PLAINS GRASSLAND	238	3	110
116			1	0	0
201	CONCHO	PINYON JUNIPER PLAINS GRASSLAND	5814	337	22
202	S OF ST JOHNS	PINYON JUNIPER PLAINS GRASSLAND	200	59	35
203	ST JOHNS	GREAT BASIN DESERT PINYON & GRASSLAND	1780	898	142
204	N OF CONCHO, ST JOHNS	GREAT BASIN DESERT PINYON & GRASSLAND	1003	9	95
205	N OF BOOK 204	GREAT BASIN DESERT PINYON & GRASSLAND	1809	3	8
206	N OF BOOK 205	PINYON JUNIPER PLAINS GRASSLAND	3304	2	10

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

APACHE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
207	CHAMBERS-SANDERS	GREAT BASIN DESERT PINYON & GRASSLAND	6576	52	26	48
208			142	0	9	0
209	S OF NAVAJO RES	PLAINS GRASSLAND GREAT BASIN DESEET	76	34	10	48
210	TOWN OF NAVAJO	PLAINS GRASSLAND	537	4	10	7
211	PETRIFIED FOREST	PLAINS GRASSLAND	2088	1	17	
212	N OF CONCHO	PINYON JUNIPER PLAINS GRASSLAND	888	5	16	
801			0	106	0	
802			0	215	0	
803			0	81	0	
804			0	96	0	
805			0	20	0	
806			0	15	0	
807			0	1	0	
821			0	0	0	
COUNTY TOTALS			37466	4102	826	7

COCHISE COUNTY
PROPERTY TAX BOOK AREAS

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCHISE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OTHER
101	BISBEE, SE OF BISBEE	SEMIDESERT GRASSLAND	814	759	25	
102	BISBEE, SW OF BISBEE	SEMIDESERT GRASSLAND CHIHUAHUAN DESERT	907	1171	38	
103	BISBEE, N OF BISBEE	MEXICAN OAK PINE CHIHUAHUAN & GRASS	827	1239	38	
104	PALOMINAS CORONADO NF	SEMIDESERT GRASSLAND CHIHUAHUAN DESERT	1065	434	85	
105	SIERRA VISTA, S OF SV CORONADO NF	SEMIDESERT GRASSLAND PANDEROSA & MEX CAN	1476	2671	39	
106	SIERRA VISTA, N OF SV	MEXICAN OAK PINE CHIHUAHUAN & GRASS	1553	2837	38	
107	SIERRA VISTA, E OF SV	SEMIDESERT GRASSLAND CHIHUAHUAN DESERT	1560	2275	31	
108	AREA AROUND TOMBSTON	SEMIDESERT GRASSLAND CHIHUAHUAN DESERT	308	76	28	
109	TOMBSTONE	CHIHUAHUAN DESERT	1213	427	3	
110	BETWEEN BISBEE & SV	MEXICAN OAK PINE CHIHUAHUAN DESERT	110	7	49	
111	N OF BOOK 103	SEMIDESERT GRASSLAND	26	0	19	
112	COURTLAND-GLEESON	SEMIDESERT GRASSLAND	76	6	61	
113	SW OF PEARCE CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	337	10	9	
114	SUN SITES	SEMIDESERT GRASSLAND	2568	374	33	
115	SUN SITES	SEMIDESERT GRASSLAND	2737	12	0	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCHISE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
116	SUN SITES	SEMIDESERT GRASSLAND	2782	12	1	5
117	SUN SITES	MEXICAN OAK PINE SEMIDESERT GRASSLAND	1331	7	1	8
118	SUN SITES	SEMIDESERT GRASSLAND	548	32	4	2
119	SUN SITES	MEXICAN OAK PINE SEMIDESERT GRASSLAND	1490	5	4	1
120	ST DAVID, E OF ST DAV CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	155	134	35	35
121	CURTIS, E OF CURTIS CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	205	223	83	61
122	SW OF SUN SITES CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	1389	4	4	2
123	BENSON	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	724	1126	29	291
124	SW OF BENSON CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	1421	103	37	83
201	N OF WILLCOX	SEMIDESERT GRASSLAND	1789	27	62	50
202	WILLCOX	SEMIDESERT GRASSLAND	2659	348	66	175
203	WILLCOX	SEMIDESERT GRASSLAND	7476	945	32	760
204	COCHISE, WILLCOX PLAYA	SEMIDESERT GRASSLAND	1099	48	53	48
205	KANSAS SETTLEMENT	SEMIDESERT GRASSLAND	909	15	72	72
206	NW OF SUN SITES CORONADO NF	SEMIDESERT GRASSLAND	2298	100	18	12

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCHISE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OTHER
207	N OF SUN SITES	SEMIDESERT GRASSLAND	2721	0	0	
208	DRAGON, RINCON MTS CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	867	219	145	
209	CASCABEL, WINCHESTER CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	283	17	76	
301	NW OF BOWIE	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	547	0	68	
302	BOWIE	CHIHUAHUA DESERT	825	206	48	
303	SAN SIMON	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	393	82	74	
304	CHIRICAHUA NATL MON CORONADO NF	MEXICAN OAK PINE CHIHUAHUA DESERT	180	3	164	
305	DOS CABEZAS	MEXICAN OAK PINE SEMIDESERT GRASSLAND	518	35	218	
401	SUNIZONA, W OF SUNIZO CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	3417	122	243	
402	PORTAL, PARADISE CORONADO NF	SEMIDESERT GRASSLAND PANDEROSA & MEX OAK	907	39	69	
403	ELFRIDA	MEXICAN OAK PINE SEMIDESERT GRASSLAND	966	120	96	
404	MCNEAL, E OF MCNEAL CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	996	35	140	
405	S OF BOOK 404	SEMIDESERT GRASSLAND	2390	22	85	
406	NE OF DOUGLAS	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	6833	20	27	
407	NW OF DOUGLAS	SEMIDESERT GRASSLAND	4183	83	85	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCHISE COUNTY

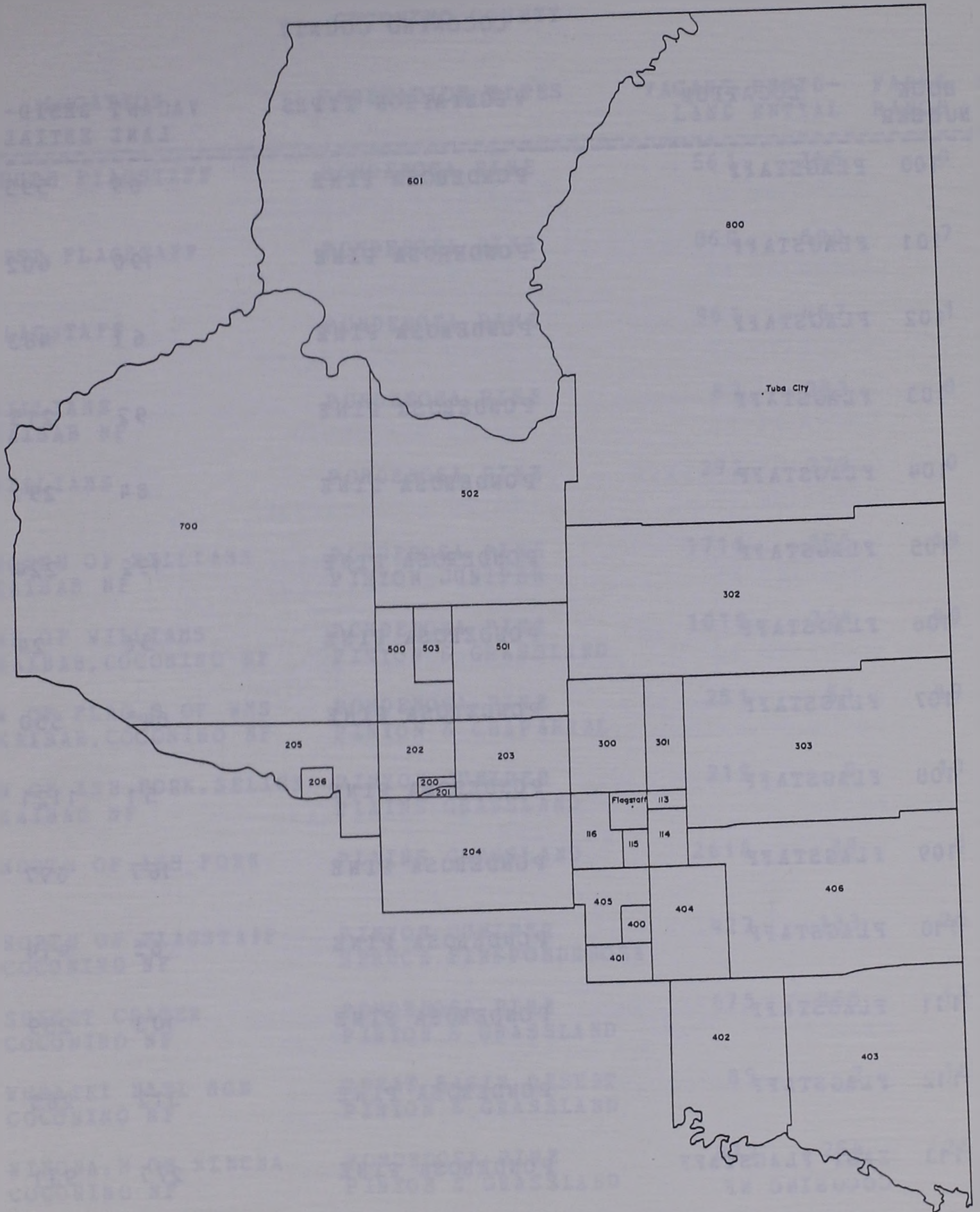
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
408	DOUGLAS	SEMIDESERT GRASSLAND	591	826	13	132
409	DOUGLAS	SEMIDESERT GRASSLAND	396	2038	0	379
410	DOUGLAS	CHIHUAHUAN DESERT	1000	1220	9	78
411	SE CORNER OF COUNTY CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	1	0	65	1
412	N OF BOOK 411	MEXICAN OAK PINE SEMIDESERT GRASSLAND	4	1	96	2
500			24	1	0	25
600			16	0	0	10
601			21	0	0	2
602			8	0	0	2
603			0	0	1	0
604			5	0	0	3
605			24	1	0	10
606			3	0	0	
607			0	0	0	
608			10	0	0	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCHISE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH
609			73	0	0
610			31	0	0
611			171	1	0
612			2	0	0
613			8	0	0
COUNTY TOTALS			70266	20518	2719

COCONINO COUNTY
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCONINO COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH
100	FLAGSTAFF	PCNDEROSA PINE	69	595	0
101	FLAGSTAFF	PCNDEROSA PINE	190	602	0
102	FLAGSTAFF	PCNDEROSA PINE	61	483	0
103	FLAGSTAFF	PCNDEROSA PINE	92	215	0
104	FLAGSTAFF	PONDEROSA PINE	84	291	0
105	FLAGSTAFF	PCNDEROSA PINE	192	224	1
106	FLAGSTAFF	PONDEROSA PINE	58	24	0
107	FLAGSTAFF	PCNDEROSA PINE	645	550	1
108	FLAGSTAFF	PONDEROSA PINE	51	1121	0
109	FLAGSTAFF	PONDEROSA PINE	167	697	0
110	FLAGSTAFF	PCNDEROSA PINE	65	414	0
111	FLAGSTAFF	PONDEROSA PINE	103	259	0
112	FLAGSTAFF	PONDEROSA PINE	312	285	0
113	EAST FLAGSTAFF COCONINO NF	PCNDEROSA PINE	277	931	1
114	SE FLAGSTAFF COCONINO NF	PCNDEROSA PINE	295	182	4

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

COCONINO COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
115	SOUTH FLAGSTAFF	PONDEROSA PINE	561	366	0	20
116	WEST FLAGSTAFF	PONDEROSA PINE	860	690	7	50
117	FLAGSTAFF	PONDEROSA PINE	961	467	1	24
200	WILLIAMS KAIBAB NF	PCNDEROSA PINE	87	243	0	48
201	WILLIAMS	PCNDEROSA PINE	292	379	0	128
202	NORTH OF WILLIAMS KAIBAB NF	PONDEROSA PINE PINYON JUNIPER	1715	250	19	51
203	NE OF WILLIAMS KAIBAB, COCONINO NF	PCNDEROSA PINE PINYON & GRASSLAND	1018	224	40	73
204	W OF FLAG, S OF WMS KAIBAB, COCONINO NF	PONDEROSA PINE PINYON & CHAPARRAL	251	54	49	31
205	N OF ASH FORK, SELIGM KAIBAB NF	PINYON JUNIPER PLAINS GRASSLAND	219	0	10	2
206	NORTH OF ASH FORK	PLAINS GRASSLAND	2618	39	0	1
300	NORTH OF FLAGSTAFF COCONINO NF	PINYON JUNIPER SPRUCE FIRE&PONDEROSA	427	133	25	4
301	SUNSET CRATER COCONINO NF	PCNDEROSA PINE PINYON & GRASSLAND	675	465	13	8
302	WUPATKI NATL MON COCONINO NF	GREAT BASIN DESEET PINYON & GRASSLAND	89	2	16	1
303	WINONA, N OF WINCNA COCONINO NF	PCNDEROSA PINE PINYON & GRASSLAND	837	254	25	6
400	MUNDS PARK COCONINO NF	PCNDEROSA PINE	2054	1281	12	2

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

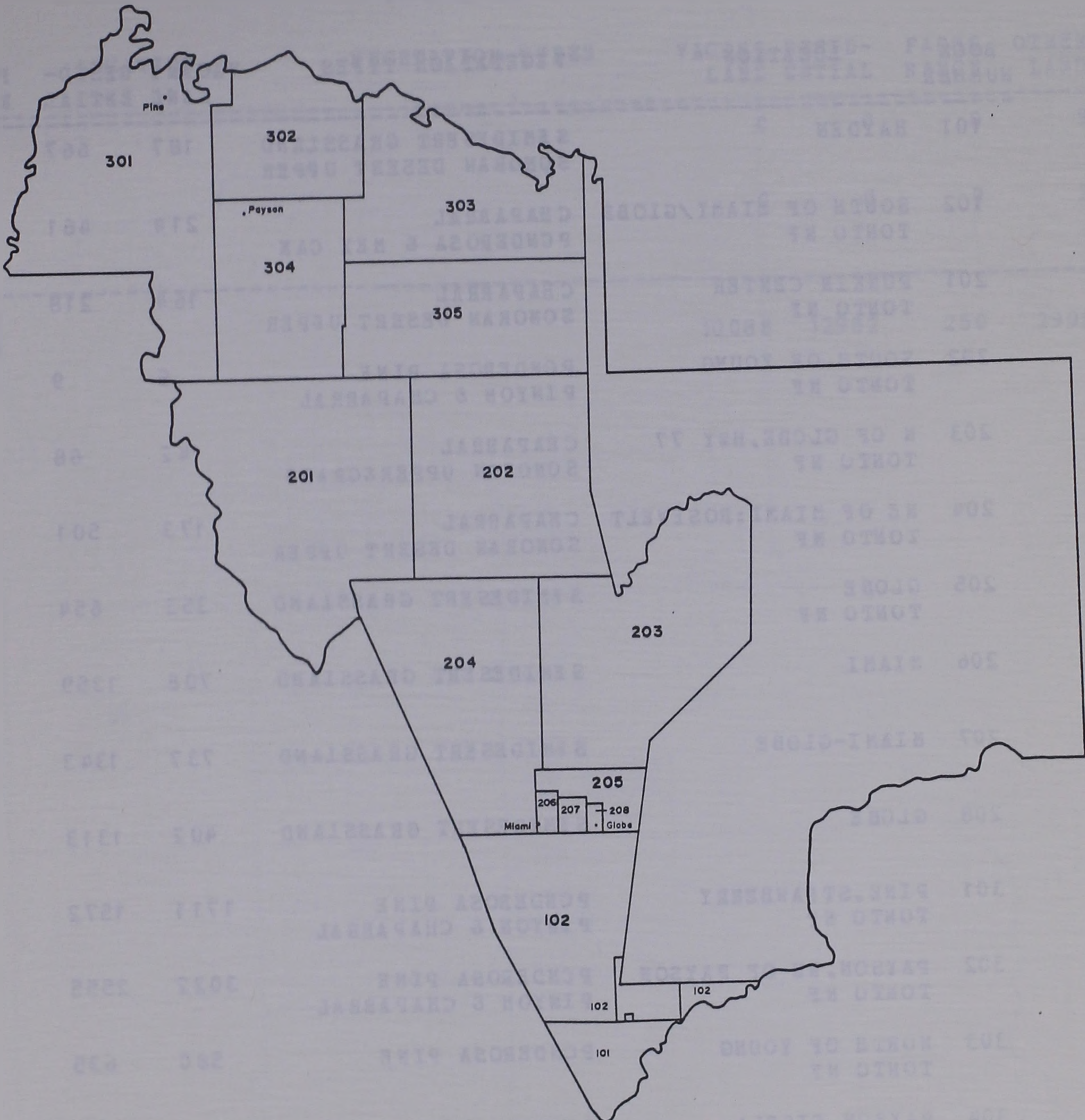
COCONINO COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	0
401	SEDONA COCONINO NF	PCNDEROSA PINE PINYON & CHAPARRAL	1156	908	7	
402	HAPPY JACK, CLINTS W COCONINO NF	PCNDEROSA PINE	240	137	20	
403	EAST OF BOOK 402 COCONINO NF	PCNDEROSA PINE PINYON & GRASSLAND	1062	882	40	
404	MORMAN LAKE COCONINO NF	PCNDEROSA PINE PLAINS GRASSLAND	388	290	20	
405	NW OF MUND'S PARK COCONINO NF	PCNDEROSA PINE PINYON & CHAPARRAL	160	184	3	
406	METEOR CRATER COCONINO NF	GREAT BASIN DESERT PINYON & GRASSLAND	478	1	104	
500	NORTH OF BOOK 202 COCONINO NF	PINYON JUNIPER PLAINS GRASSLAND	1069	3	33	
501	NORTH OF BOOK 203 COCONINO, KAIBAB NF	PCNDEROSA PINE PINYON JUNIPER	6081	10	9	
502	SOUTH OF GRAND CANYON KAIBAB NF	PCNDEROSA PINE PINYON & GRASSLAND	37	55	27	
503	VALLE	PINYON JUNIPER	2408	5	7	
600	FREDONIA	GREAT BASIN DESERT	295	285	12	
601	NORTH OF GRAND CANYON KAIBAB NF	SPRUCE FIRE & PCNDEROSA PINYON & GRASSLAND	81	17	38	
700	WEST PART OF COUNTY	GREAT BASIN DESERT PINYON & GRASSLAND	7	2	66	
800	PAGE	GREAT BASIN DESERT	282	1262	1	

COUNTY
TOTALS

29069 15761 611 23

GILA COUNTY
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

GILA COUNTY

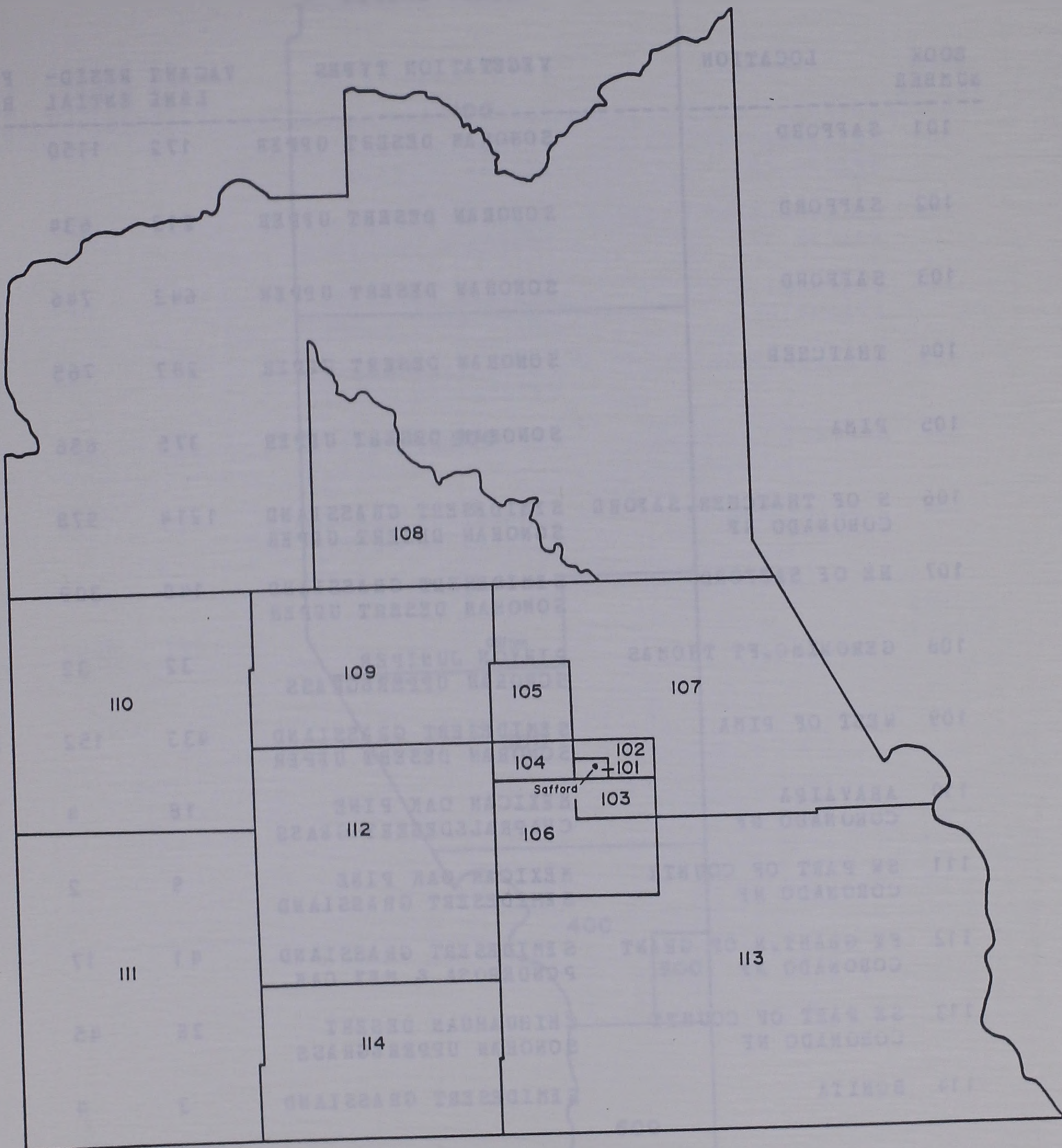
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LANE	RESID- ENTIAL	FARM & RANCH
101	HAYDEN	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	187	667	10
102	SOUTH OF MIAMI/GLOBE TONTON NF	CHAPARRAL PCNDEROSA & MEX CAK	214	461	51
201	PUNKIN CENTER TONTON NF	CHAPARRAL SONORAN DESERT UPPER	164	218	31
202	SOUTH OF YOUNG TONTON NF	PCNDEROSA PINE PINYON & CHAPARRAL	9	9	10
203	N OF GLOBE, HWY 77 TONTON NF	CHAPARRAL SONORAN UPPER & GRASS	42	68	14
204	NE OF MIAMI: ROSEVELT TONTON NF	CHAPARRAL SONORAN DESERT UPPER	173	501	19
205	GLOBE TONTON NF	SEMIDESERT GRASSLAND	353	654	22
206	MIAMI	SEMIDESERT GRASSLAND	708	1359	7
207	MIAMI-GLOBE	SEMIDESERT GRASSLAND	737	1343	4
208	GLOBE	SEMIDESERT GRASSLAND	402	1313	3
301	PINE, STRAWBERRY TONTON NF	PCNDEROSA PINE PINYON & CHAPARRAL	1711	1572	19
302	PAYSON, NE OF PAYSON TONTON NF	PCNDEROSA PINE PINYON & CHAPARRAL	3022	2555	5
303	NORTH OF YOUNG TONTON NF	PCNDEROSA PINE	580	635	4
304	PAYSON, GISELA TONTON NF	PINYON JUNIPER CHAPARRAL & DESERT GRASS	1545	1516	18
305	YOUNG TONTON NF	SEMIDESERT GRASSLAND PINYON & PONDEROSA	241	111	33

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

GILA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
400			C	0	0	9
600			C	0	0	2
COUNTY TOTALS			10088	12982	250	2995

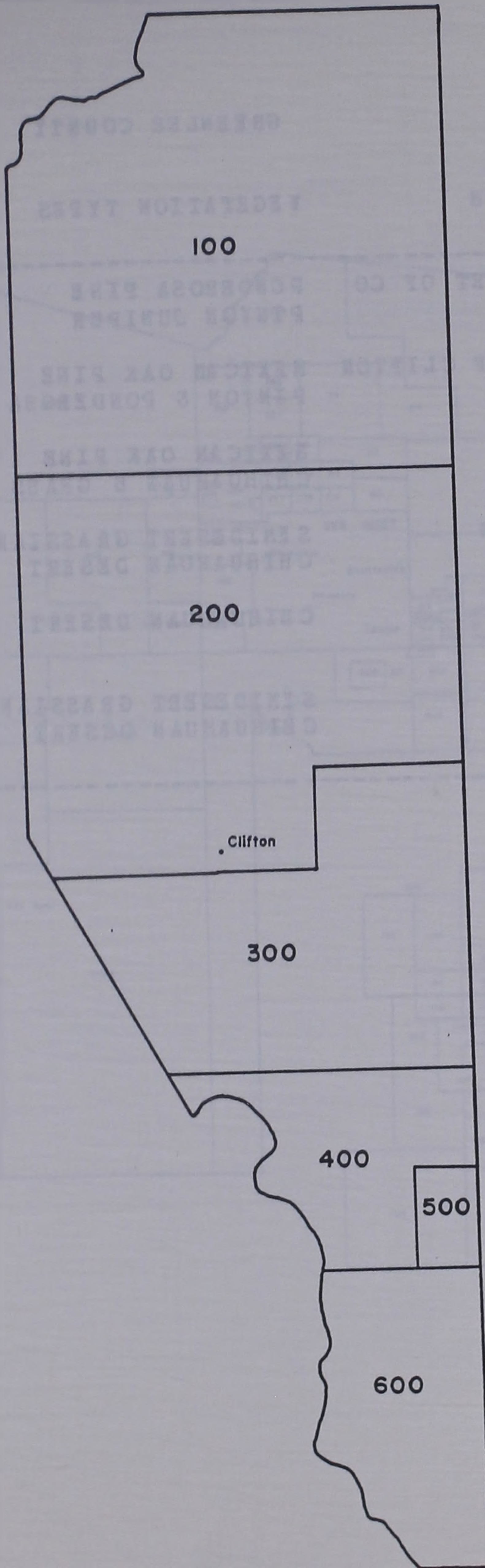
GRAHAM COUNTY
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

GRAHAM COUNTY

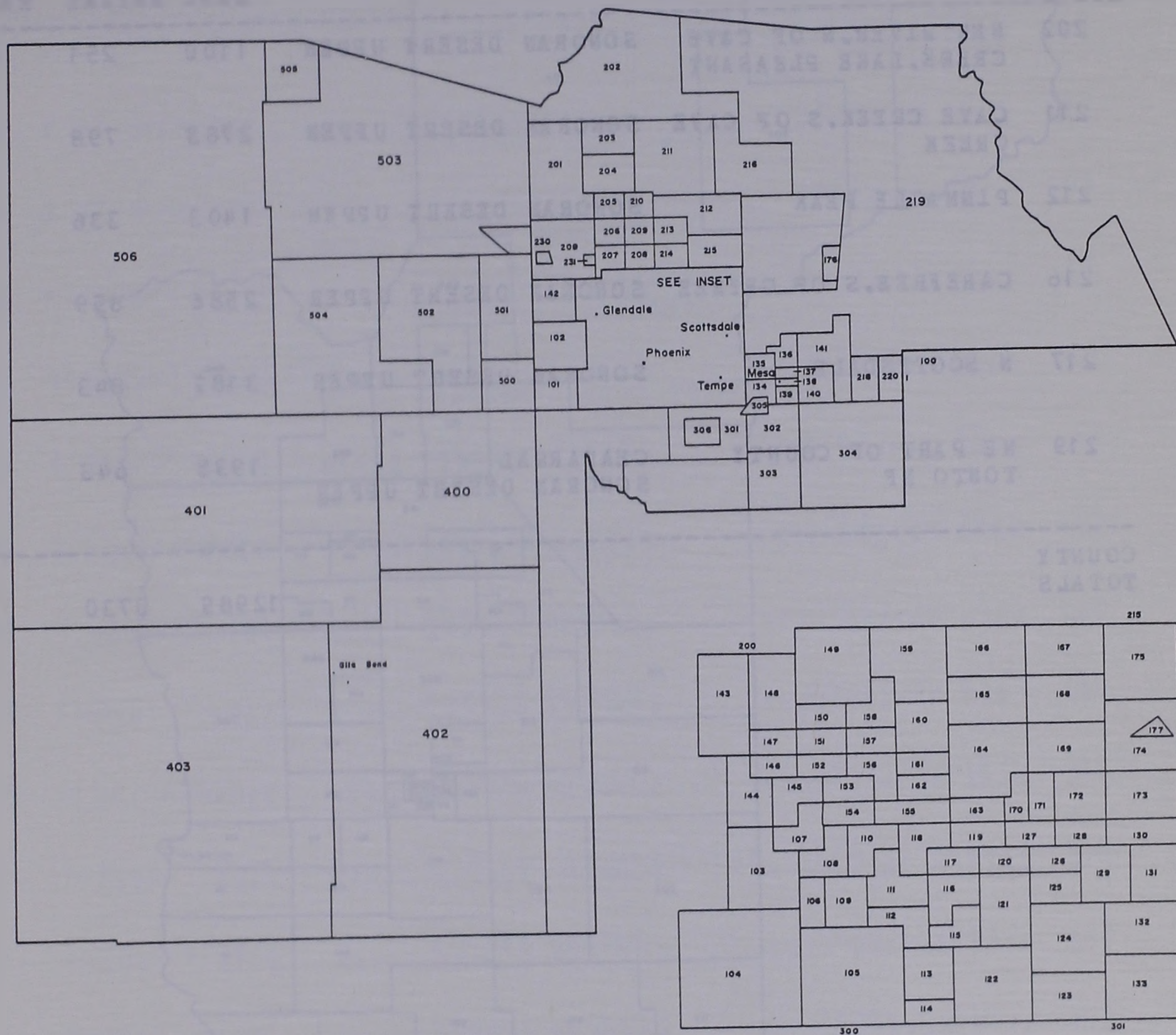
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH
101	SAFFORD	SONORAN DESERT UPPER	172	1150	14
102	SAFFORD	SONORAN DESERT UPPER	213	634	72
103	SAFFORD	SONORAN DESERT UPPER	643	746	75
104	THATCHER	SONORAN DESERT UPPER	287	765	115
105	PIMA	SONORAN DESERT UPPER	375	656	243
106	S OF THATCHER, SAFFORD CORONADO NF	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	1214	978	60
107	NE OF SAFFORD	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	140	309	101
108	GERONIMO, FT THOMAS	PINYON JUNIPER SONORAN UPPER&GRASS	32	32	80
109	WEST OF PIMA	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	433	152	231
110	ARAVAIPA CORONADO NF	MEXICAN OAK PINE CHAPRALE&DESERT GRASS	18	4	39
111	SW PART OF COUNTY CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	9	2	59
112	FT GRANT, N OF GRANT CORONADO NF	SEMIDESERT GRASSLAND PCNDEROSA & MEX CAK	41	17	44
113	SE PART OF COUNTY CORONADO NF	CHIHUAHUAN DESERT SONORAN UPPER&GRASS	28	45	29
114	BONITA	SEMIDESERT GRASSLAND	3	4	92
COUNTY TOTALS			3608	5494	1254

GREENLEE COUNTY
PROPERTY TAX BOOK AREAS

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

GREENLEE COUNTY

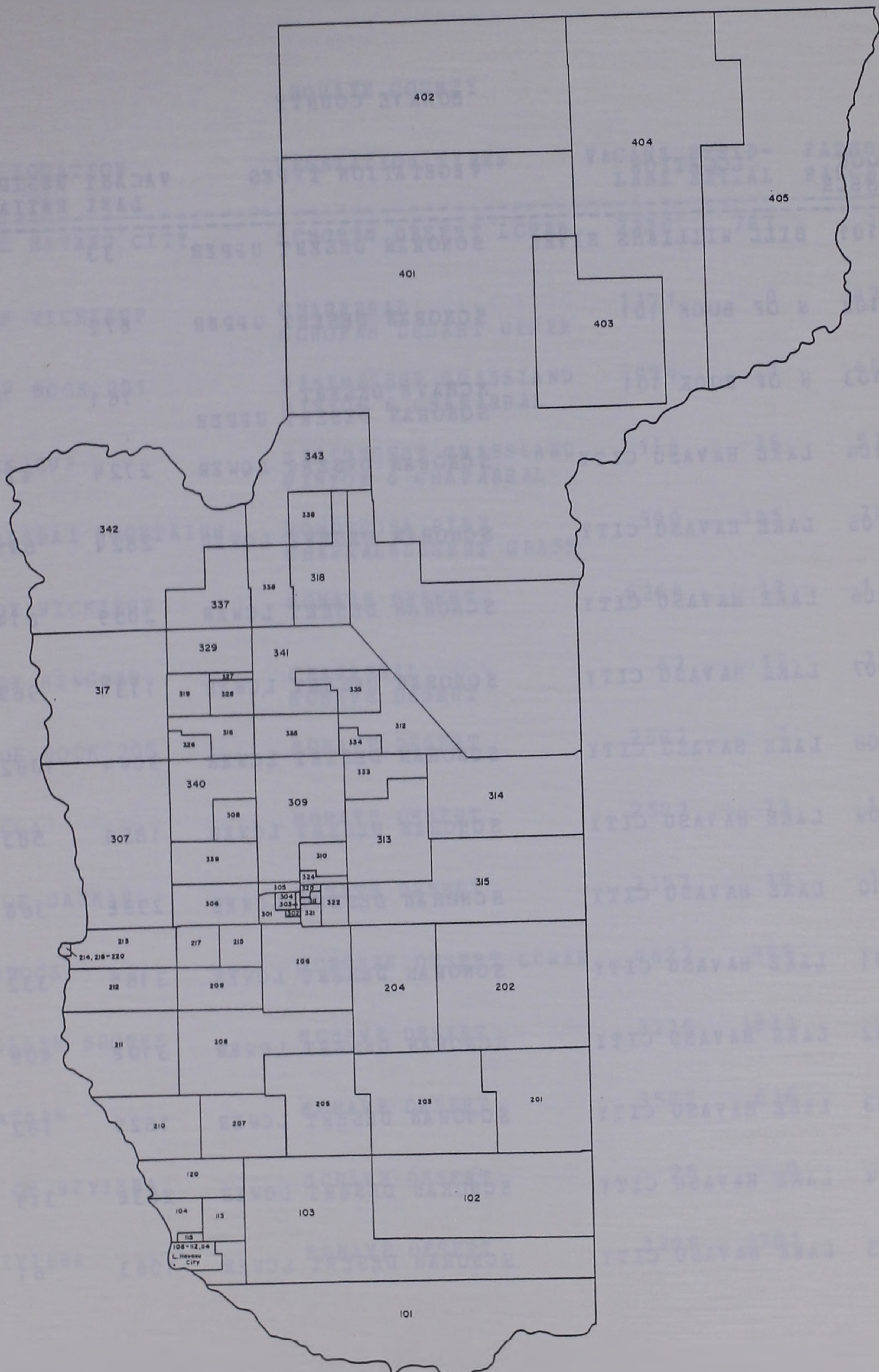
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	0
100	NORTHERN PART OF CO APACHE NF	PONDEROSA PINE PINYON JUNIPER	17	6	35	
200	CLIFTON, N OF CLIFTON APACHE NF	MEXICAN OAK PINE PINYON & PONDEROSA	203	577	47	
300	CLIFTON APACHE NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	331	430	98	
400	S OF CLIFTON	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	71	42	117	
500	DUNCAN	CHIHUAHUA DESERT	324	401	177	
600	S OF DUNCAN	SEMIDESERT GRASSLAND CHIHUAHUA DESERT	151	46	51	
COUNTY TOTALS			1097	1502	525	



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MARICOPA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OF 1
202	NEW RIVER, N OF CAVE CREEK, LAKE PLEASANT	SONORAN DESERT UPPER	1100	251	5	
211	CAVE CREEK, S OF CAVE CREEK	SONORAN DESERT UPPER	2783	798	1	
212	PINNACLE PEAK	SONORAN DESERT UPPER	1403	336	1	
216	CAREFREE, S OF CRFREE	SONORAN DESERT UPPER	2586	859	2	
217	N SCOTTSDALE	SONORAN DESERT UPPER	3182	843	24	
219	NE PART OF COUNTY TONTON	CHAPARRAL SONORAN DESERT UPPER	1935	643	14	
COUNTY TOTALS			12989	3730	47	

MOHAVE COUNTY
PROPERTY TAX BOOK AREAS

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	0
101	BILL WILLIAMS RIVER	SONORAN DESERT UPPER	33	1	10	
102	N OF BOOK 101	SONORAN DESERT UPPER	672	4	55	
103	N OF BOOK 101	MOHAVE DESERT SONORAN DESERT UPPER	761	0	17	
104	LAKE HAVASU CITY	SONORAN DESERT LOWER	2724	471	0	
105	LAKE HAVASU CITY	SONORAN DESERT LOWER	2824	699	0	
106	LAKE HAVASU CITY	SONORAN DESERT LOWER	2059	614	1	
107	LAKE HAVASU CITY	SONORAN DESERT LOWER	1131	969	0	
108	LAKE HAVASU CITY	SONORAN DESERT LOWER	3044	1082	1	
109	LAKE HAVASU CITY	SONORAN DESERT LOWER	1851	583	0	
110	LAKE HAVASU CITY	SONORAN DESERT LOWER	2986	368	0	
111	LAKE HAVASU CITY	SONORAN DESERT LOWER	3185	332	0	
112	LAKE HAVASU CITY	SONORAN DESERT LOWER	3108	409	0	
113	LAKE HAVASU CITY	SONORAN DESERT LOWER	1829	182	0	
114	LAKE HAVASU CITY	SONORAN DESERT LOWER	2636	319	0	
115	LAKE HAVASU CITY	SONORAN DESERT LOWER	1063	61	0	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
120	LAKE HAVASU CITY	SONORAN DESERT LOWER	2220	787	1	27
201	E OF WICKIEUP	CHAPARRAL SONORAN DESERT UPPER	1171	0	43	0
202	N OF BOOK 201	SEMIDESERT GRASSLAND PINYON & CHAPARRAL	494	1	45	63
203	WICKIEUP	SEMIDESERT GRASSLAND PINYON & CHAPARRAL	114	35	53	59
204	HUALAPAI MOUNTAINS	PONDEROSA PINE CHAPARRAL & DESERT GRASS	390	145	34	4
205	W OF WICKIEUP	MOHAVE DESERT	6264	17	11	3
206	S OF KINGMAN	CHAPARRAL MOHAVE DESERT	67	12	39	11
207	W OF BOOK 205	MOHAVE DESERT	2587	1	1	3
208	YUCCA	MOHAVE DESERT	2501	73	16	27
209	E OF OATMAN	MOHAVE DESERT	2157	18	18	28
210	TOPOCK	SONORAN DESERT LOWER	4627	449	0	22
211	GOLDEN SHORES	MOHAVE DESERT	3210	1833	2	81
212	OATMAN	MOHAVE DESERT	3582	616	1	113
213	E OF RIVIERA	MOHAVE DESERT	28	0	5	22
214	RIVIERA	MOHAVE DESERT	3709	2781	0	240

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH
215	SW OF KINGMAN	MOHAVE DESERT	4282	13	1
216			144	17	0
217	W OF BOOK 215	MOHAVE DESERT	2401	10	0
218	RIVIERA	MOHAVE DESERT	811	1539	0
219	RIVIERA	MCHAVE DESERT	1946	2079	0
220	RIVIERA	MCHAVE DESERT	1249	587	0
301	KINGMAN	SEMIDESERT GRASSLAND	85	12	2
302	KINGMAN	SEMIDESERT GRASSLAND	757	184	3
303	KINGMAN	SEMIDESERT GRASSLAND	350	390	0
304	KINGMAN	SEMIDESERT GRASSLAND	723	342	1
305	KINGMAN	SEMIDESERT GRASSLAND	928	559	4
306	W OF KINGMAN	MOHAVE DESERT	4323	369	4
307	KATHERINE	MCHAVE DESERT	2603	233	19
308	CHLORIDE	SEMIDESERT GRASSLAND MOHAVE DESERT	3211	180	1
309	N OF KINGMAN	PINYON JUNIPER SEMIDESERT GRASSLAND	3105	204	36

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
310	N OF KINGMAN	SEMIDESERT GRASSLAND	1722	24	4	18
311	KINGMAN	SEMIDESERT GRASSLAND	2595	992	0	150
312	W OF PEACH SPRINGS	PINYON JUNIPER	3232	2	9	5
313	HACKBERRY	PINYON JUNIPER SEMIDESERT GRASSLAND	5874	69	25	12
314	VALENTINE, TRUXTON	PINYON JUNIPER PLAINS GRASSLAND	635	40	47	40
315	S OF BOCK 314	PINYON JUNIPER	1047	13	34	
316	DOLAN SPRINGS	PINYON JUNIPER MOHAVE DESERT	3325	163	7	1
317	W OF DOLAN SPRINGS	MOHAVE DESERT	4510	8	19	4
318	S OF BOCK 338	PINYON JUNIPER MOHAVE DESERT	2192	0	15	
319	DOLAN SPRINGS	MOHAVE DESERT	3195	196	4	1
320	KINGMAN	SEMIDESERT GRASSLAND	2581	584	2	13
321	KINGMAN	SEMIDESERT GRASSLAND	504	267	1	5
322	E OF KINGMAN	SEMIDESERT GRASSLAND	158	6	3	5
324	KINGMAN	SEMIDESERT GRASSLAND	6995	3018	4	10
326	S OF DOLAN SPRINGS	MOHAVE DESERT	2166	53	1	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

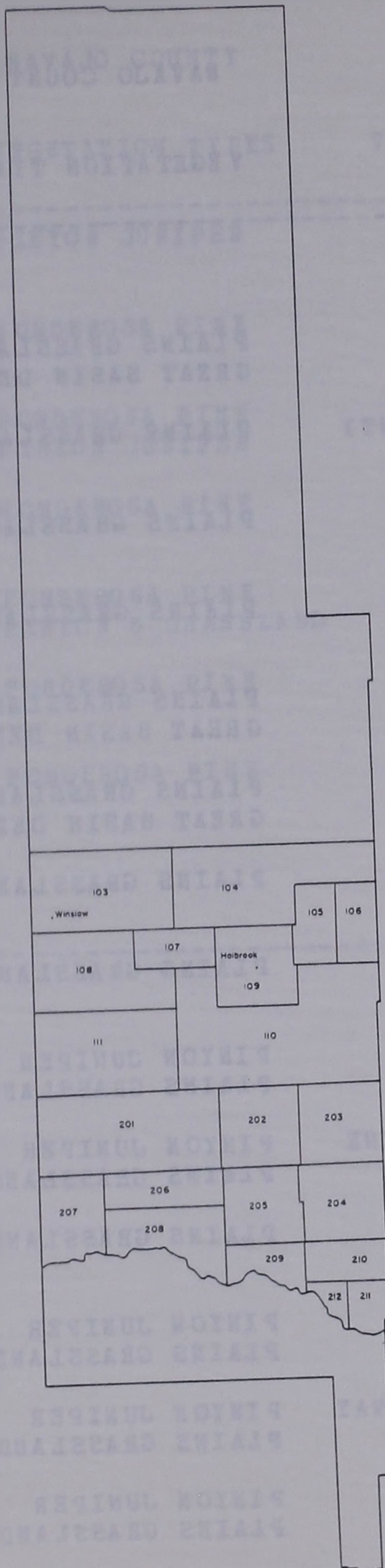
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS & RANCH	0
327	N OF BOOK 328	MOHAVE DESERT	2913	126	0	
328	NE OF DOLAN SPRINGS	MOHAVE DESERT	2702	84	6	
329	WHITE HILLS	MOHAVE DESERT	2718	45	11	
333	NW OF HACKBERRY	SEMIDESERT GRASSLAND	3526	2	9	
334	N OF BOOK 333	SEMIDESERT GRASSLAND	3092	0	3	
335	N OF BOOK 334	PINYON JUNIPER MOHAVE DESERT	3197	0	23	
336	S OF PIERCE	MOHAVE DESERT	3096	63	17	
337	W OF BOOK 336	MOHAVE DESERT	3722	37	44	
338	SE OF PIERCE	MOHAVE DESERT	2718	0	2	
339	S OF CHLORIDE	MOHAVE DESERT	2976	41	13	
340	NW OF CHLORIDE	PINYON JUNIPER MOHAVE DESERT	2030	1	6	
341	RED LAKE	SEMIDESERT GRASSLAND MOHAVE DESERT	2506	0	15	
342	TEMPLE BAR	MOHAVE DESERT	1059	2	7	
343	PIERCE	MOHAVE DESERT	4933	271	3	
401	S OF BOOK 402	PINYON JUNIPER MOHAVE DESERT	4	0	49	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

MOHAVE COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OTHER LAND
402	LITTLEFIELD AREA	PINYON JUNIPER MOHAVE DESERT	1381	17	27	19
403	MT TRUMBULL	PONDEROSA PINE PINYON & GRASSLAND	22	0	57	3
404	N OF MT TRUMBULL	GREAT BASIN DESERT PINYON & GRASSLAND	52	18	111	23
405	S OF KAIBAB	GREAT BASIN DESERT PINYON & GRASSLAND	53	15	86	10
COUNTY TOTALS			173376	25737	1088	2686

NAVAJO COUNTY
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

NAVAJO COUNTY

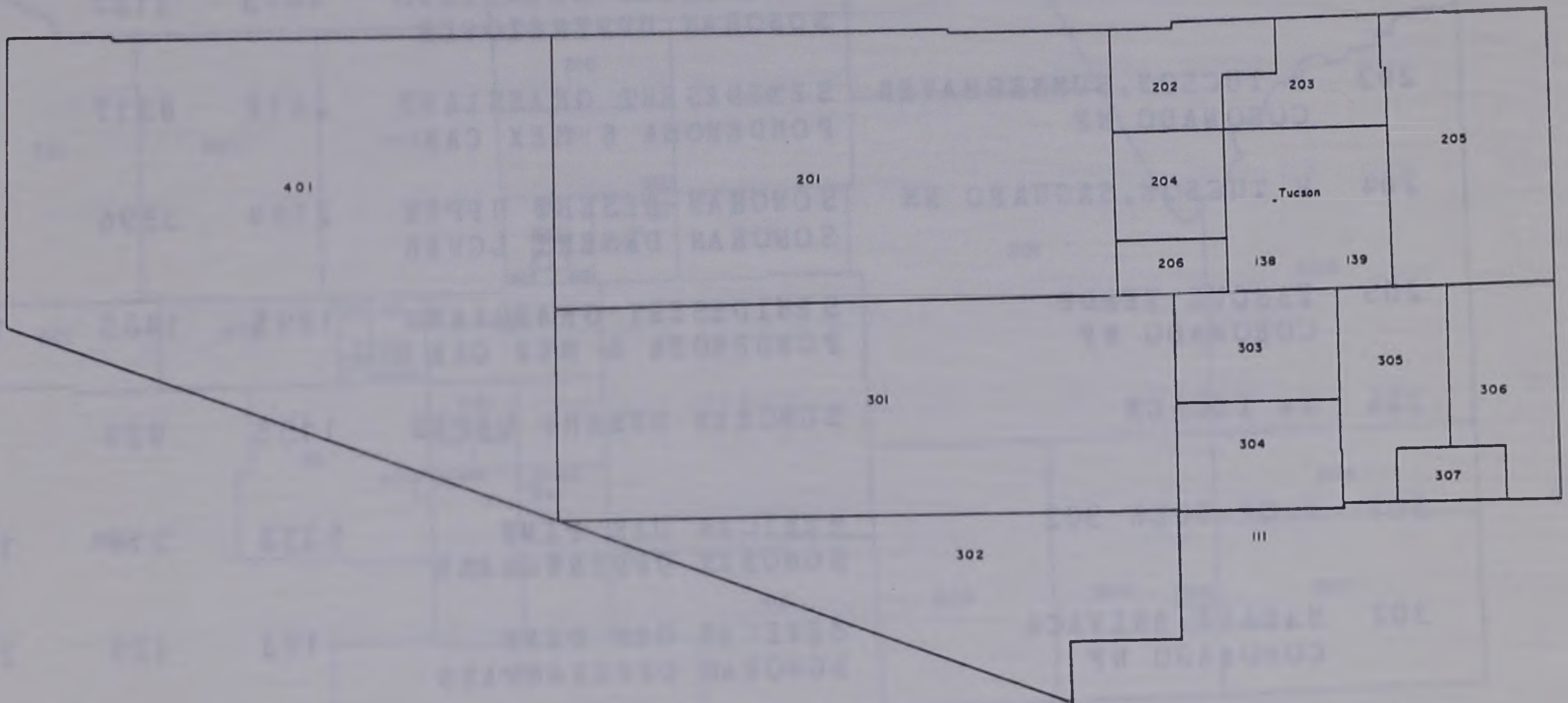
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	BESID- ENTIAL	FARM & RANCH	OT L
101			2	0	0	
103	WINSLOW	PLAINS GRASSLAND GREAT BASIN DESERT	993	2371	36	
104	NE PART OF COUNTY	PLAINS GRASSLAND	881	1	9	
105	SUN VALLEY	PLAINS GRASSLAND	13272	77	3	1
106	E OF SUN VALLEY	PLAINS GRASSLAND	1009	5	5	
107	JOSEPH CITY	PLAINS GRASSLAND GREAT BASIN DESERT	249	232	52	
108	S OF WINSLOW	PLAINS GRASSLAND GREAT BASIN DESERT	523	2	34	
109	HOLBROOK	PLAINS GRASSLAND	835	1390	57	3
110	WOODRUFF	PLAINS GRASSLAND	283	40	54	
111	S OF BOOK 108	PINYON JUNIPER PLAINS GRASSLAND	191	1	40	
201	N OF HEBER, ARI SITGREAVES NF	PINYON JUNIPER PLAINS GRASSLAND	878	4	27	
202	SNOWFLAKE	PLAINS GRASSLAND	2215	816	99	1
203	E OF SNOWFLAKE	PINYON JUNIPER PLAINS GRASSLAND	4769	53	6	
204	E OF TAYLOR, SHUMWAY	PINYON JUNIPER PLAINS GRASSLAND	4750	353	27	
205	PINEDALE, TAYLOR SITGREAVES NF	PINYON JUNIPER PLAINS GRASSLAND	558	522	32	1

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

NAVAJO COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
206	ARIPINE SITGREAVES NF	PINYON JUNIPER	2651	1716	7	67
207	HEBER SITGREAVES NF	PONDEROSA PINE	219	127	1	33
208	S OF BOOK 206 SITGREAVES NF	PONDEROSA PINE PINYON JUNIPER	180	90	15	47
209	LINDEN. SHOW LOW SITGREAVES NF	PONDEROSA PINE	2235	1323	11	82
210	SHOW LOW SITGREAVES NF	PONDEROSA PINE PINYON & GRASSLAND	734	978	22	231
211	PINETOP SITGREAVES NF	PONDEROSA PINE	2852	2965	4	127
212	LAKESIDE SITGREAVES NF	PONDEROSA PINE	2246	2548	3	144
213			0	1	0	67
COUNTY TOTALS			42525	15615	544	3728

PIMA COUNTY
PROPERTY TAX BOOK AREAS

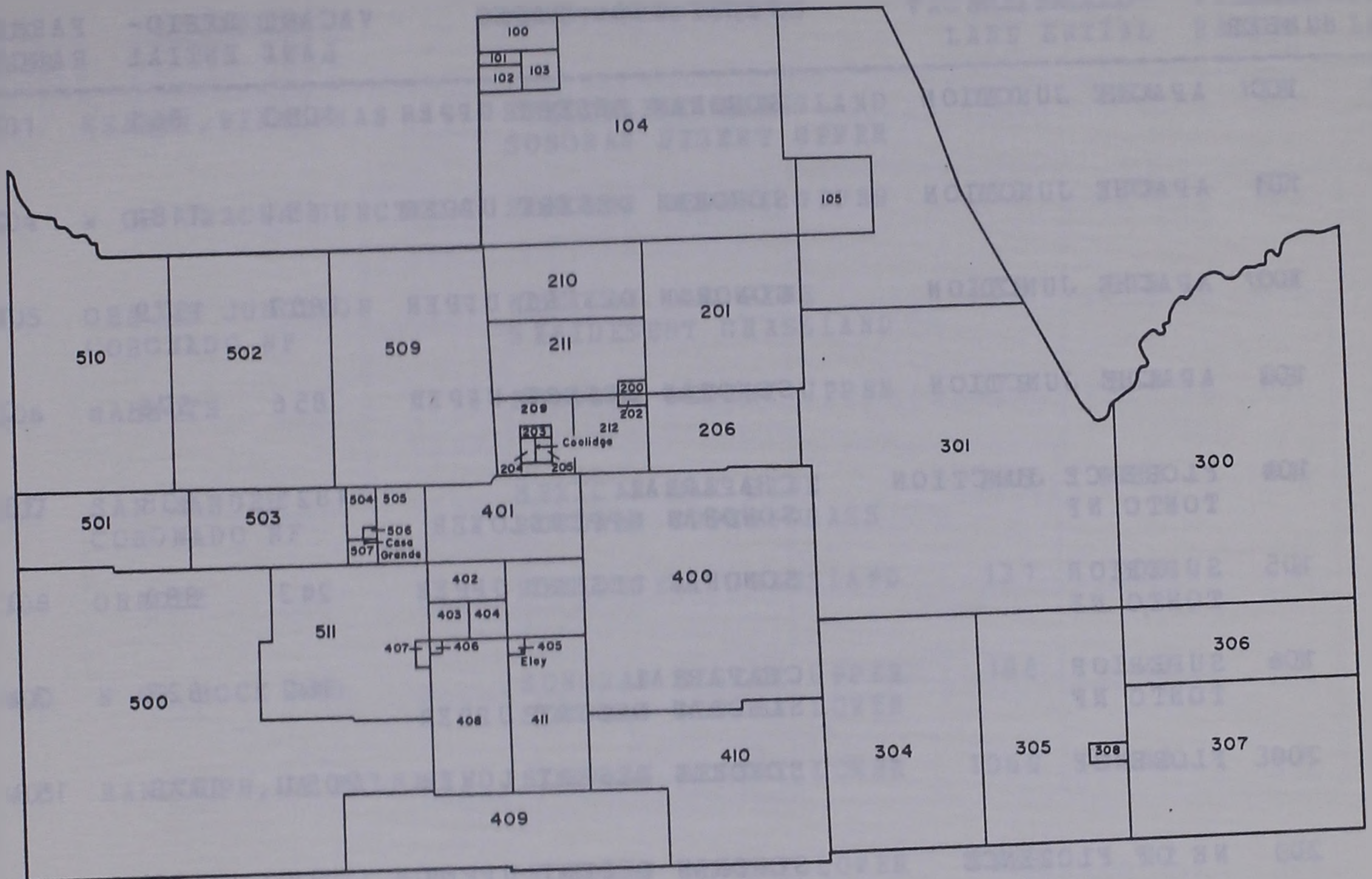


BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

PIMA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OT L
201	SILVERBELL, SAGUARO	SONORAN DESERT UPPER SONORAN DESERT LOWER	1466	948	113	
202	MARANA, CORTARO	SEMIDESERT GRASSLAND SONORAN UPPER & LOWER	1013	1127	159	
203	N TUCSON, SUMMERHAVEN CORONADO NF	SEMIDESERT GRASSLAND PONDEROSA & MEX CAK	2618	8217	32	
204	W TUCSON, SAGUARO NM	SONORAN DESERT UPPER SONORAN DESERT LOWER	2194	3896	10	
205	TANQUE VERDE CORONADO NF	SEMIDESERT GRASSLAND PONDEROSA & MEX CAK	1895	1485	157	
206	SW TUCSON	SONORAN DESERT UPPER	1155	929	4	
301	N OF BOOK 302	MEXICAN OAK PINE SONORAN UPPER & GRASS	5358	216	157	
302	SASABE, ARIVACA CORONADO NF	MEXICAN OAK PINE SONORAN UPPER & GRASS	193	120	276	
303	SAHUARITA AREA	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	390	908	158	
304	GREEN VALLEY CORONADO NF	SEMIDESERT GRASSLAND	1432	8543	81	
305	E OF BOOKS 303, 304 CORONADO NF	MEXICAN OAK PINE SONORAN UPPER & GRASS	3335	464	149	
306	SE PART OF COUNTY CORONADO NF	MEXICAN OAK PINE CHIHUAHUA & GRASS	451	75	78	
307	GREATERTVILLE CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	2	3	98	
401	AJO, CHILDS	SONORAN DESERT UPPER SONORAN DESERT LOWER	282	1443	8	
COUNTY TOTALS			21784	28374	1480	126

PINAL COUNTY
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

PINAL COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
100	APACHE JUNCTION	SONORAN DESERT UPPER	1083	861	0	
101	APACHE JUNCTION	SONORAN DESERT UPPER	651	1184	0	
102	APACHE JUNCTION	SONORAN DESERT UPPER	1607	1379	1	
103	APACHE JUNCTION	SONORAN DESERT UPPER	856	576	0	
104	FLORENCE JUNCTION TONTON NF	CHAPARRAL SONORAN UPPER & LOWER	1825	638	33	
105	SUPERIOR TONTON NF	SONORAN DESERT UPPER	243	880	0	
106	SUPERIOR TONTON NF	CHAPARRAL SONORAN DESERT UPPER	162	327	34	
200	FLORENCE	SONORAN DESERT LOWER	2051	1178	159	
201	NE OF FLORENCE	SONORAN DESERT UPPER SONORAN DESERT LOWER	34	10	64	
202	FLORENCE	SONORAN DESERT LOWER	430	567	99	
203	N OF COOLIDGE	SONORAN DESERT LOWER	119	185	66	
204	COOLIDGE	SONORAN DESERT LOWER	180	789	36	
205	COOLIDGE	SONORAN DESERT LOWER	357	1065	43	
206	SE OF FLORENCE	SONORAN DESERT UPPER SONORAN DESERT LOWER	480	127	12	
300	DUDLEYVILLE	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	289	333	120	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

PINAL COUNTY

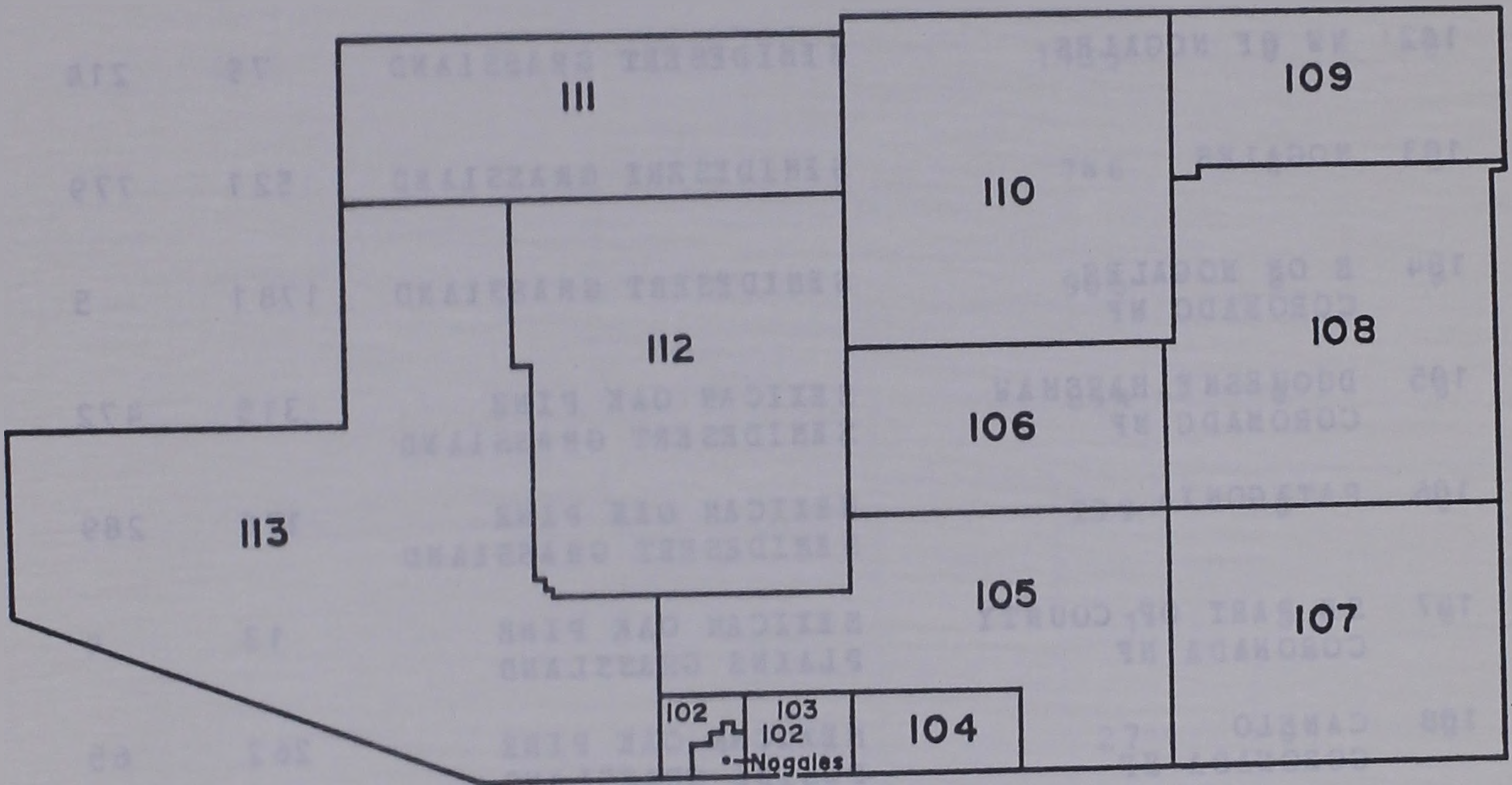
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
301	KEARNY, WINKLEMAN	SEMIDESERT GRASSLAND SONORAN DESERT UPPER	190	861	128	129
304	W OF ORACLE JUNCTION	SONORAN DESERT UPPER	199	18	57	35
305	ORACLE JUNCTION CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	488	515	103	72
306	MAMMOTH	SONORAN DESERT UPPER	372	538	43	101
307	SAN MANUEL CORONADO NF	MEXICAN OAK PINE SONORAN UPPER & GRASS	245	1333	81	46
308	ORACLE	SEMIDESERT GRASSLAND	131	200	2	30
400	N OF BOOK 410	SONORAN DESERT UPPER SONORAN DESERT LOWER	188	28	43	6
401	RANDOLPH, LA PALMA	SONORAN DESERT LOWER	1060	448	347	100
402	N OF BOOKS 403, 404	SONORAN DESERT LOWER	3929	12	38	12
403	W OF BOOK 404	SONORAN DESERT LOWER	4488	11	3	23
404	NW OF ELOY	SONORAN DESERT LOWER	3635	162	4	22
405	ELOY	SONORAN DESERT LOWER	514	994	0	251
406	ARIZONA CITY	SONORAN DESERT LOWER	1538	287	0	7
407	ARIZONA CITY	SONORAN DESERT LOWER	3760	117	0	36
408	SW OF ELOY	SONORAN DESERT LOWER	2538	65	105	35

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

PINAL COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTH ER
409	S OF FRIENDLY CORNER	SONORAN DESERT LOWER	921	26	119	
410	RED ROCK	SONORAN DESERT UPPER SONORAN DESERT LOWER	324	13	33	
411	ELOY, FRIENDLY CORNER	SONORAN DESERT LOWER	625	332	114	
500	SW PART OF COUNTY	SONORAN DESERT UPPER SONORAN DESERT LOWER	584	6	50	
501	W OF STANFIELD	SONORAN DESERT LOWER	2059	145	40	
502	E OF MARICOPA	SONORAN DESERT LOWER	402	80	70	
503	CASA GRANDE, STANFIELD	SONORAN DESERT LOWER	8916	469	135	
504	CASA GRANDE	SONORAN DESERT LOWER	1662	1221	15	
505	CASA GRANDE	SONORAN DESERT LOWER	630	1081	89	
506	CASA GRANDE	SONORAN DESERT LOWER	194	1211	0	
507	CASA GRANDE	SONORAN DESERT LOWER	267	610	24	
509	NW OF COOLIDGE	SONORAN DESERT UPPER SONORAN DESERT LOWER	2104	425	69	
510	MARICOPA	SONORAN DESERT LOWER	1631	385	179	
511	S OF CASA GRANDE	SONORAN DESERT LOWER	6449	133	91	
901			0	0	0	
COUNTY TOTALS			60410	21825	2649	373

SANTA CRUZ
PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

SANTA CRUZ COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LANE	RESID- ENTIAL	FARME RANCH	OTHER LAND
101	NOGALES	SEMIDESERT GRASSLAND	422	1613	1	3
102	NW OF NOGALES	SEMIDESERT GRASSLAND	79	214	6	6
103	NOGALES	SEMIDESERT GRASSLAND	521	779	17	1
104	E OF NOGALES CORONADO NF	SEMIDESERT GRASSLAND	1781	5	3	3
105	DUQUESNE, HARSHAW CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	315	472	50	9
106	PATAGONIA	MEXICAN OAK PINE SEMIDESERT GRASSLAND	176	289	40	5
107	SE PART OF COUNTY CORONADO NF	MEXICAN OAK PINE PLAINS GRASSLAND	13	4	23	3
108	CANELO CORONADO NF	MEXICAN OAK PINE PLAINS GRASSLAND	262	65	45	3
109	ELGIN	PLAINS GRASSLAND SEMIDESERT GRASSLAND	488	53	58	4
110	N OF PATAGONIA	PONDEROSA PINE MEXICAN OAK PINE	126	23	36	2
111	AMADO, MADERA CANYON CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	87	86	24	3
112	TUBAC, TUMACACORI	SEMIDESERT GRASSLAND	521	353	40	9
113	SW CORNER OF COUNTY CORONADO NF	MEXICAN OAK PINE SEMIDESERT GRASSLAND	227	228	43	2
114			680	311	0	8
115			7072	33	4	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

SANTA CRUZ COUNTY

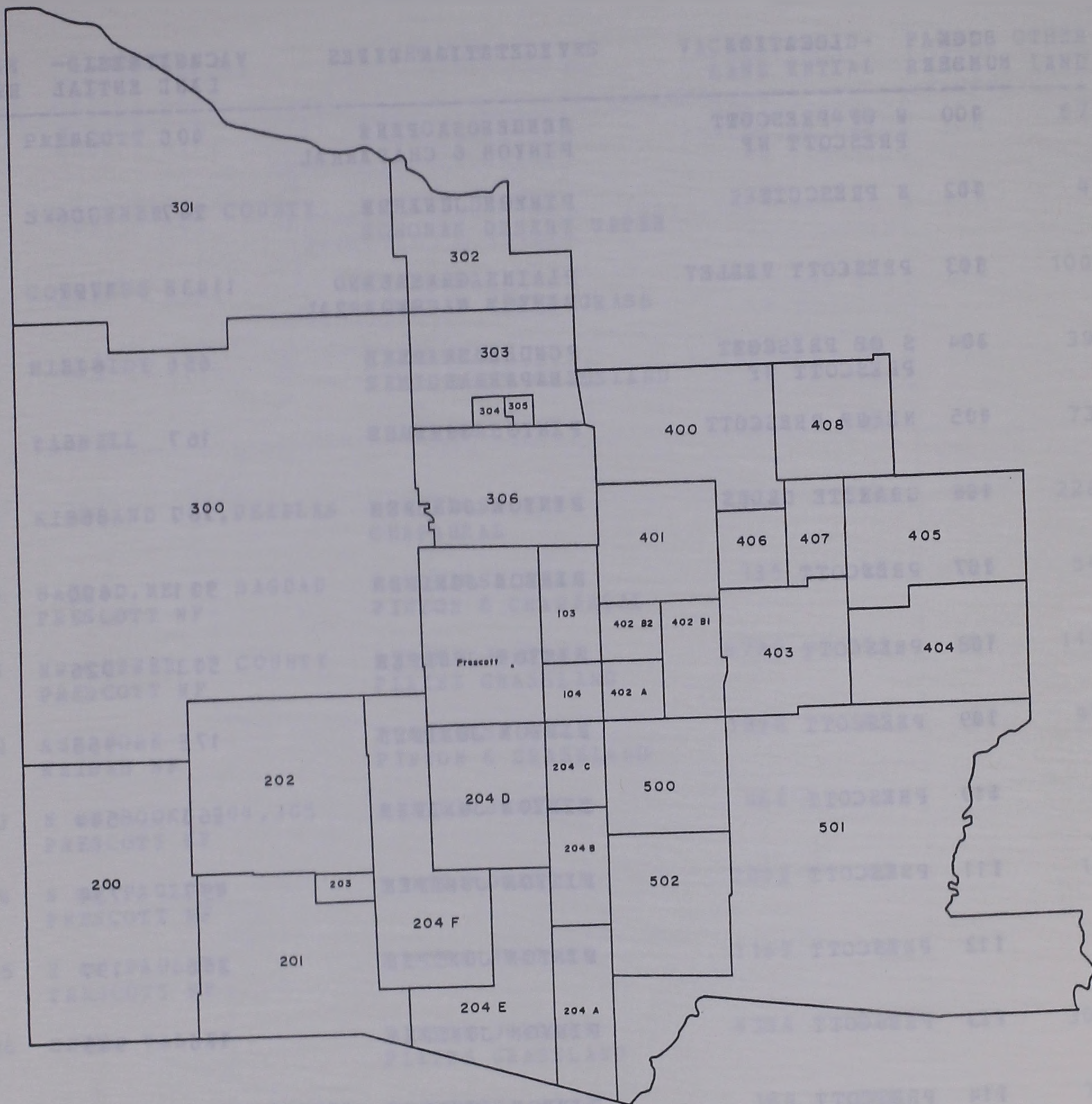
BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
116			4657	0	2	0
117			1133	0	0	0
119			746	0	0	0
120			906	0	0	0
124			844	0	0	0
125			299	0	0	0
127			1	0	0	0
128			27	0	0	0
129			1017	1	1	0
130			337	0	0	0
131			16	0	0	0
132			2031	0	0	0
133			1724	0	0	0
137			913	0	0	0
139			16	0	0	0

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

SANTA CRUZ COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
140			45	1	0	
149			0	0	8	
150			1000	49	0	
151			319	1	0	
152			1498	0	0	
153			507	24	0	
154			21	6	0	
200			3	0	0	
301			1	0	0	
302			1	0	0	
305			1	0	0	
306			1	0	0	
COUNTY TOTALS			30834	4610	401	91

YAVAPAI COUNTY PROPERTY TAX BOOK AREAS



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YAVAPAI COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OTHER LAND
100	W OF PRESCOTT PRESCOTT NF	PCNDEROSA PINE PINYON & CHAPARRAL	400	341	25	
102	N PRESCOTT	PINYON JUNIPER	247	306	28	
103	PRESCOTT VALLEY	PLAINS GRASSLAND PINYON & CHAPARRAL	11438	1797	59	24
104	S OF PRESCOTT PRESCOTT NF	PCNDEROSA PINE CHAPARRAL	656	618	5	8
105	NE OF PRESCOTT	PINYON JUNIPER	167	6	16	
106	GRANITE DELLS	PINYON JUNIPER	767	866	23	
107	PRESCOTT	PINYON JUNIPER	911	630	15	
108	PRESCOTT	PINYON JUNIPER	513	926	11	
109	PRESCOTT	PINYON JUNIPER	175	953	8	16
110	PRESCOTT	PINYON JUNIPER	266	544	3	3
111	PRESCOTT	PINYON JUNIPER	497	734	8	7
112	PRESCOTT	PINYON JUNIPER	266	197	1	2
113	PRESCOTT	PINYON JUNIPER	176	945	5	31
114	PRESCOTT	PINYON JUNIPER	95	409	6	10
115	PRESCOTT	PINYON JUNIPER	335	442	8	9

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

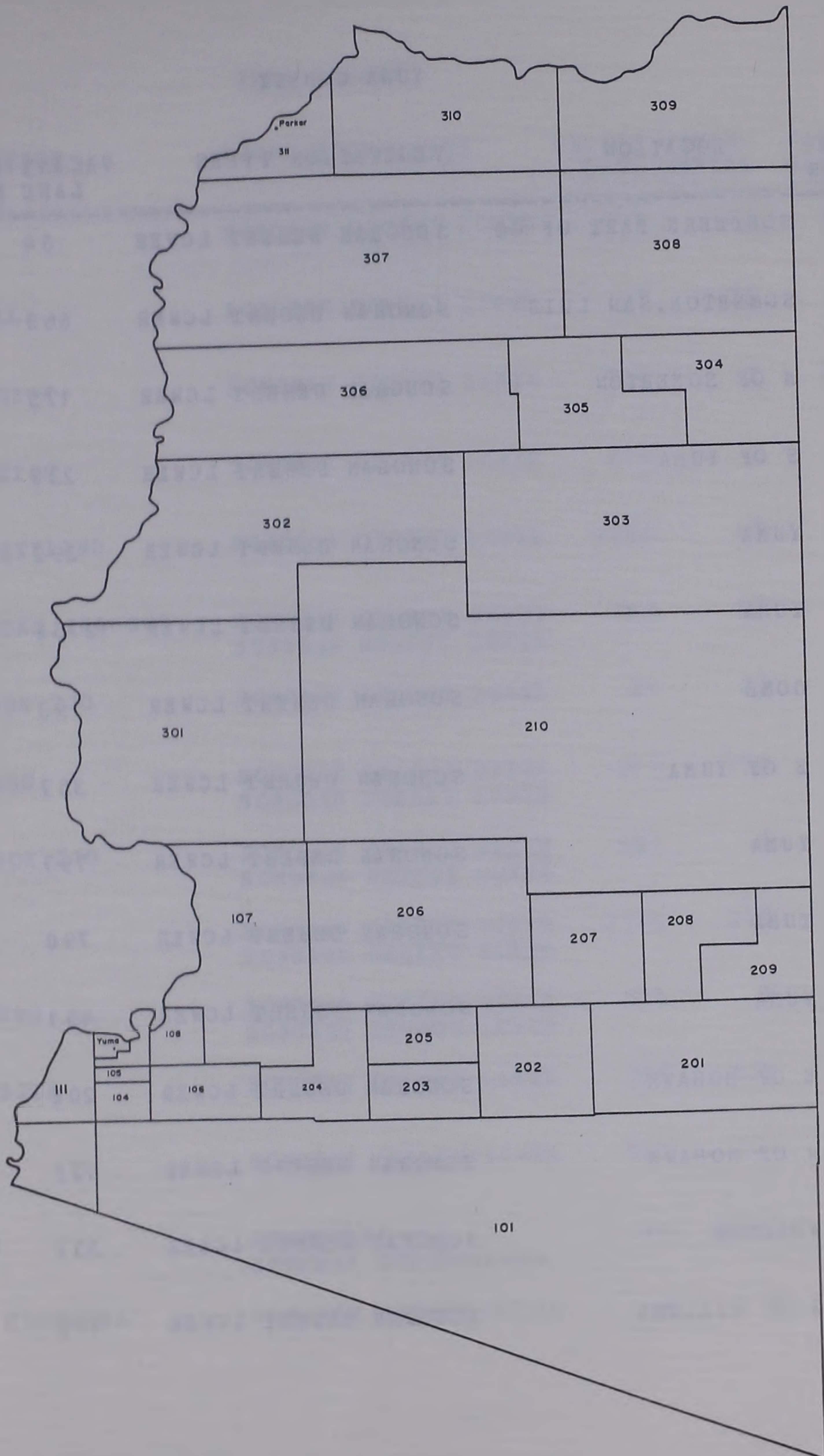
YAVAPAI COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARM & RANCH	OTHER LAND
116	PRESCOTT	PINYON JUNIPER	461	1419	9	67
200	SW CORNER OF COUNTY	MCHAVE DESERT SONORAN DESERT UPPER	236	1	10	4
201	CONGRESS	CHAPARRAL SONORAN UPPER & GRASS	497	317	48	100
202	HILLSIDE	CHAPARRAL SEMIDESERT GRASSLAND	688	68	86	39
203	YARNELL	CHAPARRAL	322	425	19	73
204	KIRKLAND JCT. PEEPLES	PCNDEROSA PINE CHAPARRAL	1904	556	130	226
300	BAGDAD, NE OF BAGDAD PRESCOTT NF	PCNDEROSA PINE PINYON & CHAPARRAL	135	48	155	54
301	NW CORNER OF COUNTY PRESCOTT NF	PINYON JUNIPER PLAINS GRASSLAND	6722	253	87	113
302	ASH FORK KAIBAB NF	PCNDEROSA PINE PINYON & GRASSLAND	1890	162	30	97
303	N OF BOOKS 304, 305 PRESCOTT NF	PINYON JUNIPER	460	1	10	4
304	N OF PAULDEN PRESCOTT NF	PINYON JUNIPER	2002	27	5	12
305	N OF PAULDEN PRESCOTT NF	PINYON JUNIPER	1169	13	1	5
306	CHINO VALLEY	PINYON JUNIPER PLAINS GRASSLAND	4384	929	129	301
400	CLARKDALE, PERKINSVILLE PRESCOTT NF	PCNDEROSA PINE PINYON & CHAPARRAL	184	366	18	74
401	JEROME PRESCOTT NF	SEMIDESERT GRASSLAND PINYON & PONDEROSA	336	156	24	99

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YAVAPAI COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARME RANCH	OTHER LAND
402	HUMBOLDT, DEWEY PRESCOTT NF	CHAPARRAL SEMIDESERT GRASSLAND	4 178	1086	54	19
403	W OF HUMBOLDT, DEWEY PRESCOTT NF	SEMIDESERT GRASSLAND PINYON & CHAPARRAL	653	445	29	12
404	CAMP VERDE PRESCOTT NF	PINYON JUNIPER SONORAN UPPER GRASS	2642	1133	37	27
405	N OF CAMP VERDE PRESCOTT NF	PINYON JUNIPER	3193	637	15	8
COUNTY TOTALS			48965	17756	1117	330

YUMA COUNTY
PROPERTY TAX BOOK AREAS

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YUMA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
101	SOUTHERN PART OF CO	SONORAN DESERT LCWER	84	51	297	350
102	SOMERTON, SAN LUIS	SONORAN DESERT LCWER	663	725	306	180
103	N OF SOMERTON	SONORAN DESERT LCWER	175	572	324	130
104	S OF YUMA	SONORAN DESERT LCWER	238	277	352	50
105	YUMA	SONORAN DESERT LOWER	292	4291	80	290
106	YUMA	SONORAN DESERT LCWER	2752	2058	183	160
107	DOVE	SONORAN DESERT LCWER	93	187	211	130
108	E OF YUMA	SONORAN DESERT LCWER	357	158	144	40
109	YUMA	SONORAN DESERT LCWER	797	4981	78	740
110	YUMA	SONORAN DESERT LCWER	790	3824	28	560
111	YUMA	SONORAN DESERT LCWER	451	1186	129	60
201	E OF MOHAWK	SONORAN DESERT LCWER	208	0	0	270
202	W OF MOHAWK	SONORAN DESERT LCWER	925	46	121	140
203	WELLTON	SONORAN DESERT LCWER	337	256	45	170
204	W OF WELLTON	SONORAN DESERT LCWER	142	42	79	50

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YUMA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHER LAND
205	ROLL	SONORAN DESERT LOWER	995	183	312	101
206	N OF ROLL	SONORAN DESERT LOWER	23	26	66	29
207	N OF MOHAWK	SONORAN DESERT LOWER	724	2	109	167
208	NW OF AZTEC	SONORAN DESERT LOWER	470	2	68	7
209	AZTEC, DATELAND	SONORAN DESERT LOWER	4355	27	21	43
210	N OF BOOKS 206-209	SONORAN DESERT UPPER SONORAN DESERT LOWER	164	10	51	199
301	W OF BOOK 210	SONORAN DESERT LOWER	54	27	13	116
302	EHRENBERG	SONORAN DESERT UPPER SONORAN DESERT LOWER	267	180	23	111
303	N OF BOOK 210	SONORAN DESERT UPPER SONORAN DESERT LOWER	697	0	1	93
304	SALOME	SONORAN DESERT UPPER SONORAN DESERT LOWER	2170	245	67	95
305	VICKSBURG	SONORAN DESERT UPPER SONORAN DESERT LOWER	225	8	2	73
306	QUARTZSITE	SONORAN DESERT LOWER	398	435	6	176
307	BOUSE	SONORAN DESERT LOWER	597	243	24	277
308	WENDEN	CHAPARRAL SONORAN UPPER&LOWER	174	141	101	100
309	ALAMO CROSSING	SONORAN DESERT UPPER	9	1	1	32

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YUMA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTH LA
310	BILL WILLIAMS RIVER	SONORAN DESERT UPPER SONORAN DESERT LOWER	564	376	1	1
311	PARKER	SONORAN DESERT LOWER	1255	2199	11	13
502			0	0	0	
503			0	0	0	
505			0	1	0	
506			0	0	0	
508			0	1	1	
509			0	0	0	
510			0	1	0	
511			0	0	0	
603			0	1	0	
604			0	0	0	
605			0	0	0	
608			0	0	0	
609			0	0	1	

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
LAND USE INVENTORY BY VEGETATION TYPE

YUMA COUNTY

BOOK NUMBER	LOCATION	VEGETATION TYPES	VACANT LAND	RESID- ENTIAL	FARMS RANCH	OTHE LAN
610			0	1	3	
701			0	0	0	
702			0	9	0	
704			0	0	0	
706			0	0	0	
709			0	0	0	
710			0	0	0	
711			0	5	1	
COUNTY TOTALS			21445	22778	3260	65
STATE TOTALS			563922	200784	16771	474

